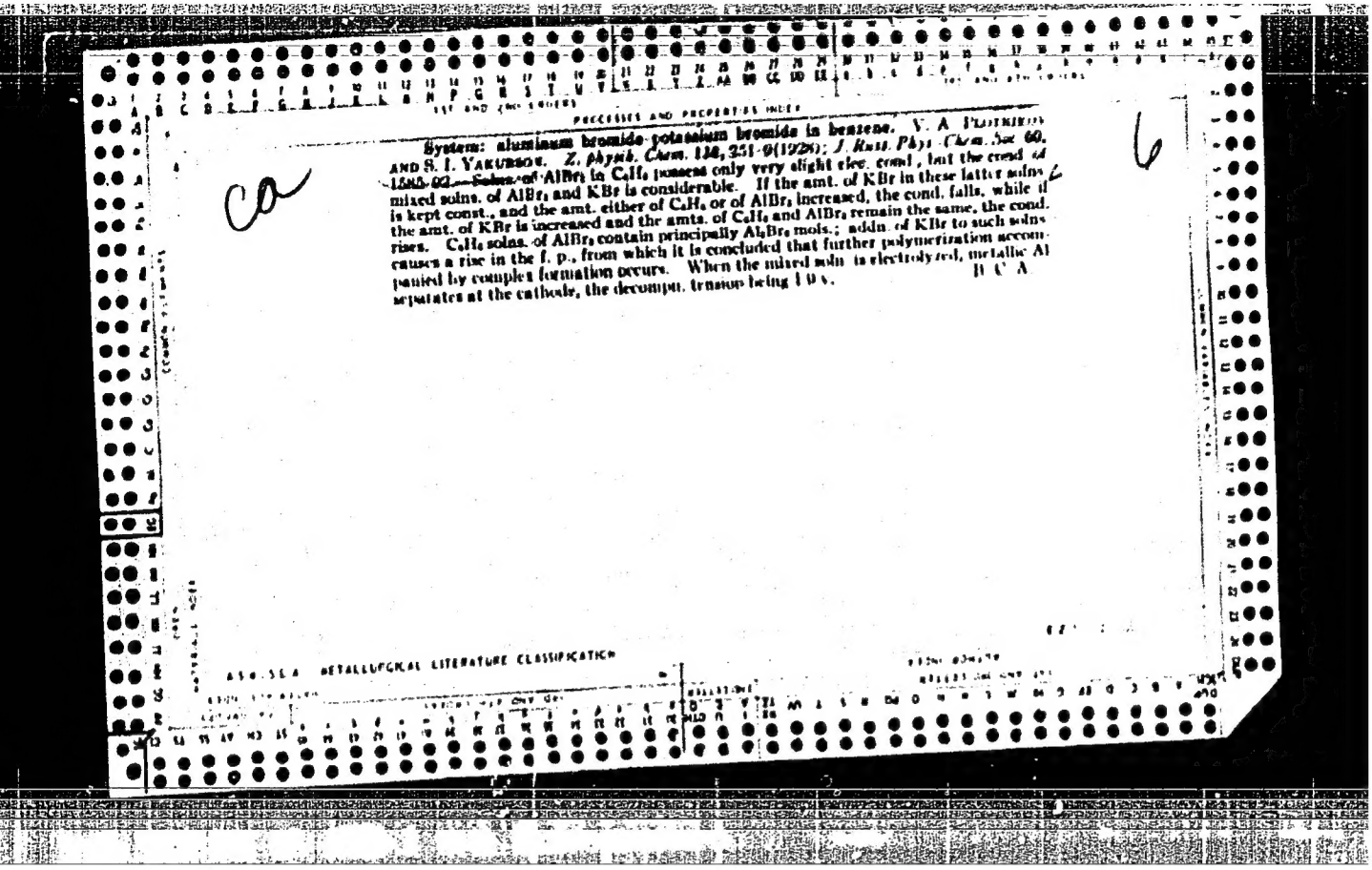
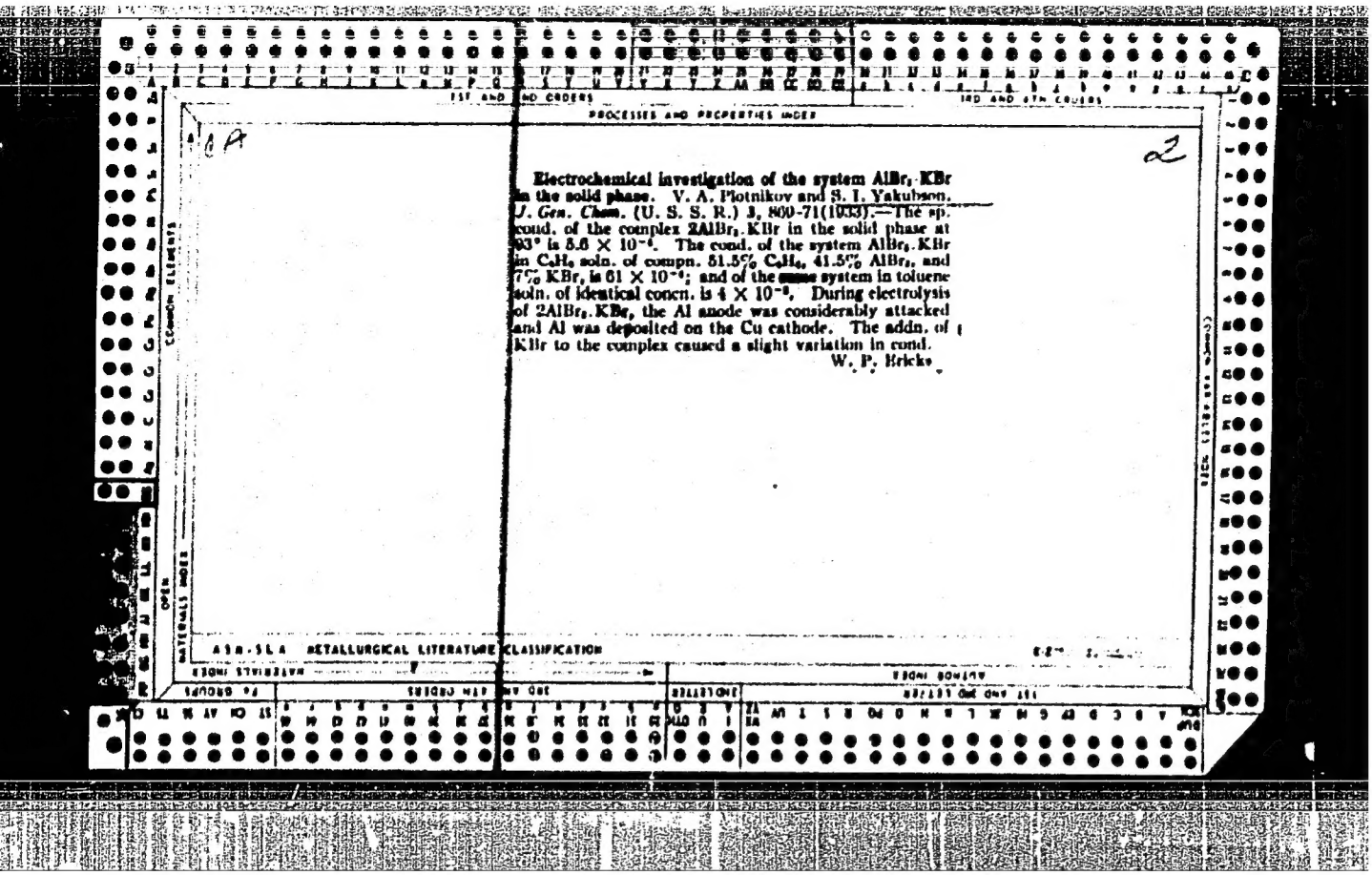


PROCESSES AND PROPERTIES INDEX

System: aluminum bromide-potassium bromide in benzene. V. A. PLOTNIKOV AND S. I. YAKUBSON. *Z. physik. Chem.* 134, 251-9(1928); *J. Russ. Phys. Chem. Soc.* 60, 1585-92.—Solns. of $AlBr_3$ in C_6H_6 possess only very slight elec. cond., but the cond. of mixed solns. of $AlBr_3$ and KBr is considerable. If the amt. of KBr in these latter solns. is kept const., and the amt. either of C_6H_6 or of $AlBr_3$ increased, the cond. falls, while if the amt. of KBr is increased and the amts. of C_6H_6 and $AlBr_3$ remain the same, the cond. rises. C_6H_6 solns. of $AlBr_3$ contain principally Al_2Br_6 mols.; addn. of KBr to such solns causes a rise in the f. p., from which it is concluded that further polymerization accompanied by complex formation occurs. When the mixed soln. is electrolyzed, metallic Al separates at the cathode, the decompn. tension being 1.0 v. H. C. A.

A.S.M.E.A. METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

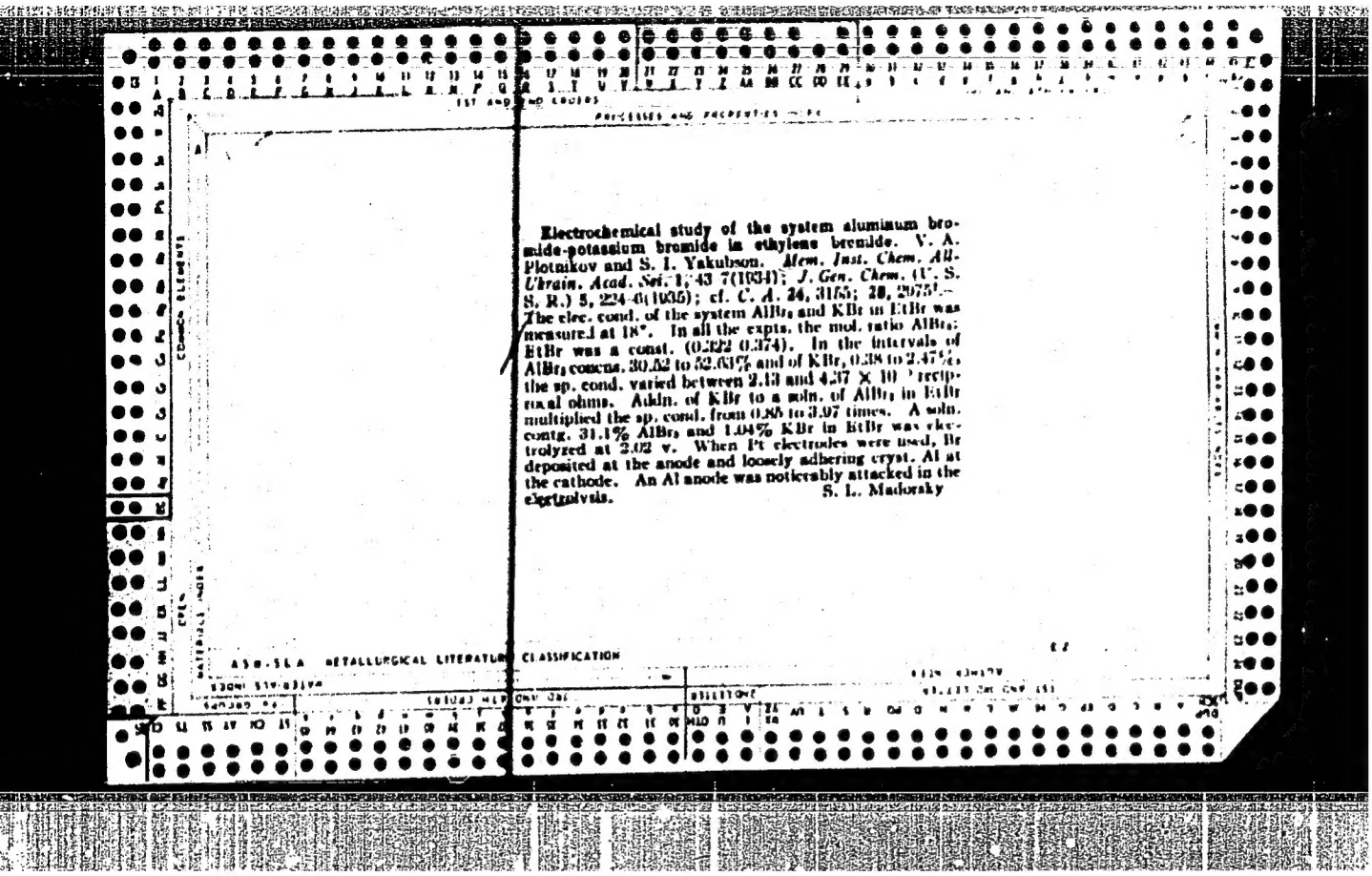
1A

2

Electrochemical investigation of the system $AlBr_3$-KBr in the solid phase. V. A. Plotnikov and S. I. Yakubson. *J. Gen. Chem.* (U. S. S. R.) 3, 809-71(1933).—The sp. cond. of the complex $2AlBr_3$.KBr in the solid phase at 93° is 5.6×10^{-4}. The cond. of the system $AlBr_3$.KBr in C_6H_6 soln. of compn. 51.5% C_6H_6, 41.5% $AlBr_3$, and 7% KBr, is 61×10^{-4}; and of the same system in toluene soln. of identical concn. is 4×10^{-4}. During electrolysis of $2AlBr_3$.KBr, the Al anode was considerably attacked and Al was deposited on the Cu cathode. The addn. of KBr to the complex caused a slight variation in cond.

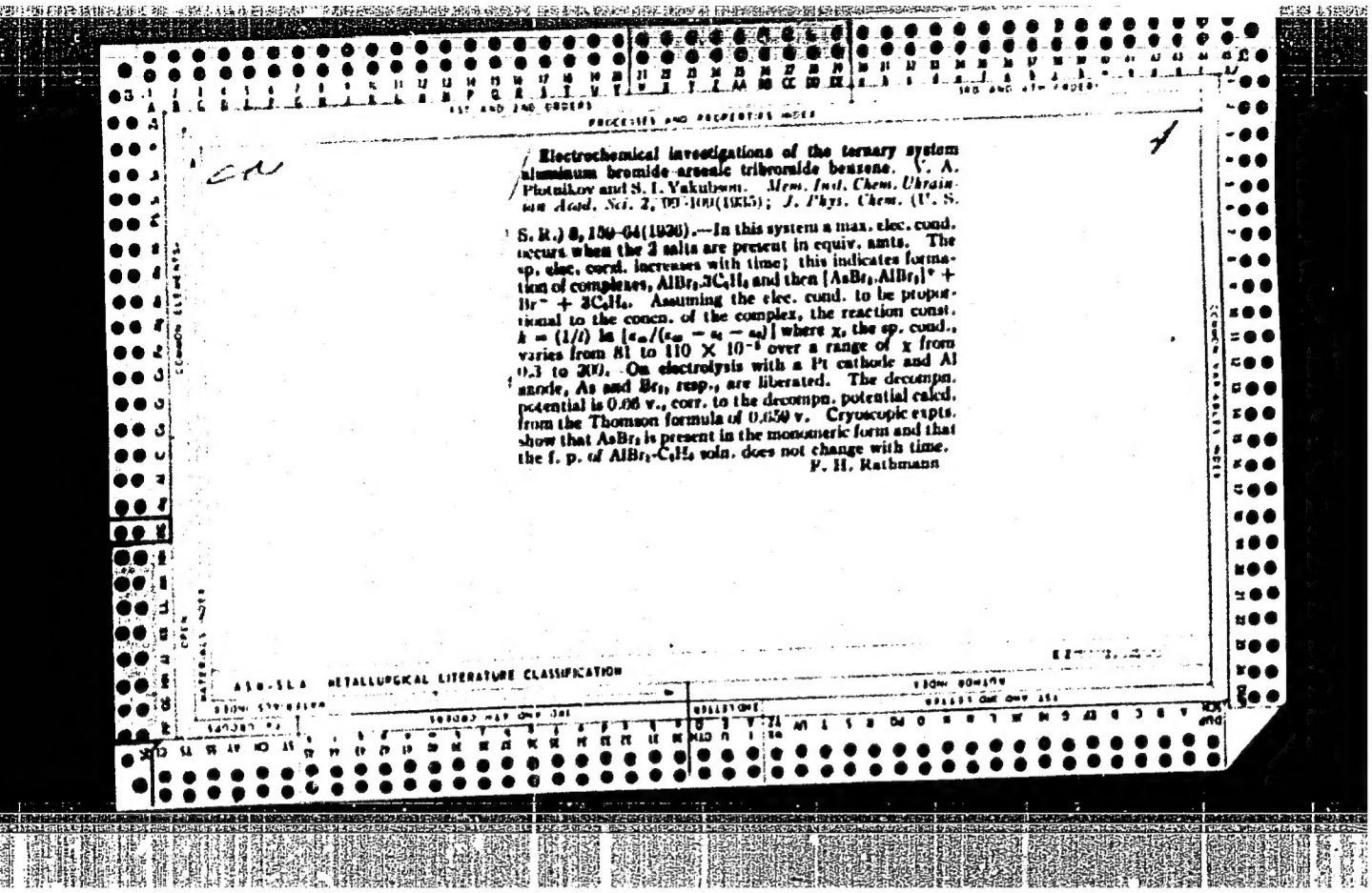
W. P. Bricke

A.S.M.-S.L.A. METALLURGICAL LITERATURE CLASSIFICATION



Electrochemical study of the system aluminum bromide-potassium bromide in ethylene bromide. V. A. Plotnikov and S. I. Yakubson. *Mem. Inst. Chem. All-Ukrain. Acad. Sci.* 1, 43 7(1934); *J. Gen. Chem.* (U. S. S. R.) 5, 234-6(1935); cf. *C. A.* 24, 3155; 29, 2075⁹.—The elec. cond. of the system $AlBr_3$ and KBr in EtBr was measured at 18°. In all the expts. the mol. ratio $AlBr_3$: EtBr was a const. (0.222 0.374). In the intervals of $AlBr_3$ concns. 30.52 to 32.61% and of KBr, 0.38 to 2.47%, the sp. cond. varied between 2.13 and 4.37 × 10⁻³ reciprocal ohms. Addn. of KBr to a soln. of $AlBr_3$ in EtBr multiplied the sp. cond. from 0.85 to 3.97 times. A soln. contg. 31.1% $AlBr_3$ and 1.04% KBr in EtBr was electrolyzed at 2.02 v. When Pt electrodes were used, Br deposited at the anode and loosely adhering cryst. Al at the cathode. An Al anode was noticeably attacked in the electrolysis.

S. L. Madorsky



Electrochemical investigations of the ternary system aluminum bromide-arsenic tribromide-benzene. V. A. Plotnikov and S. I. Yakubson. *Mem. Inst. Chem. Ukrainian Acad. Sci.* 2, 99-109(1935); *J. Phys. Chem.* (U. S. S. R.) 8, 159-64(1936).—In this system a max. elec. cond. occurs when the 2 salts are present in equiv. amts. The sp. elec. cond. increases with time; this indicates formation of complexes, $AlBr_3.3C_6H_6$ and then $[AsBr_2.AlBr_4]^+ + Br^- + 3C_6H_6$. Assuming the elec. cond. to be proportional to the concn. of the complex, the reaction const. $k = (1/t) \ln [\kappa_\infty/(\kappa_\infty - \kappa_t - \kappa_0)]$ where χ, the sp. cond., varies from 81 to 110 × 10^{-5} over a range of χ from 0.3 to 20). On electrolysis with a Pt cathode and Al anode, As and Br_2, resp., are liberated. The decompn. potential is 0.06 v., corr. to the decompn. potential calcd. from the Thomson formula of 0.650 v. Cryoscopic expts. show that $AsBr_3$ is present in the monomeric form and that the f. p. of $AlBr_3$-C_6H_6 soln. does not change with time.

P. H. Rathmann

A10-5L4 METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

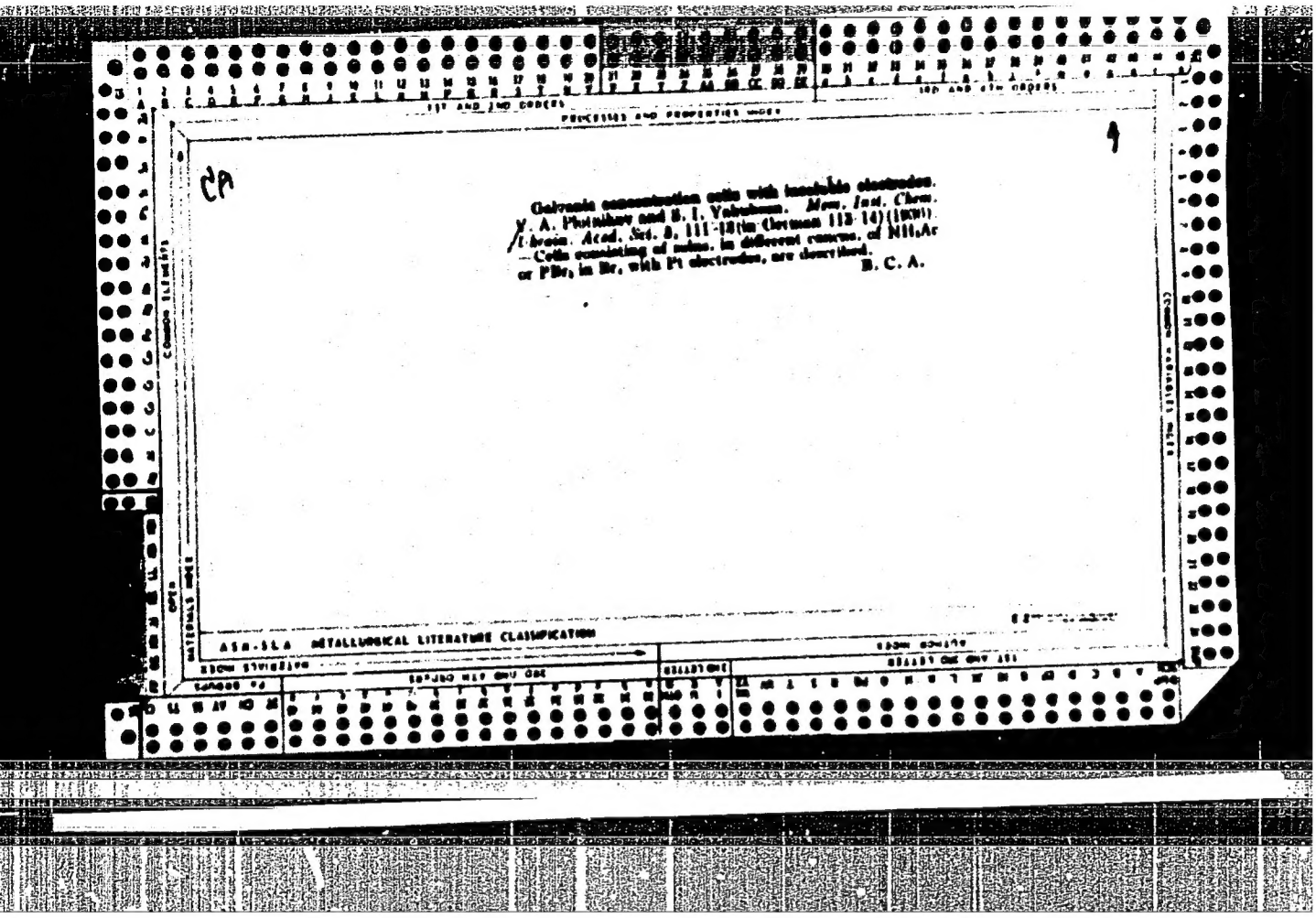
3RD AND 4TH ORDERS

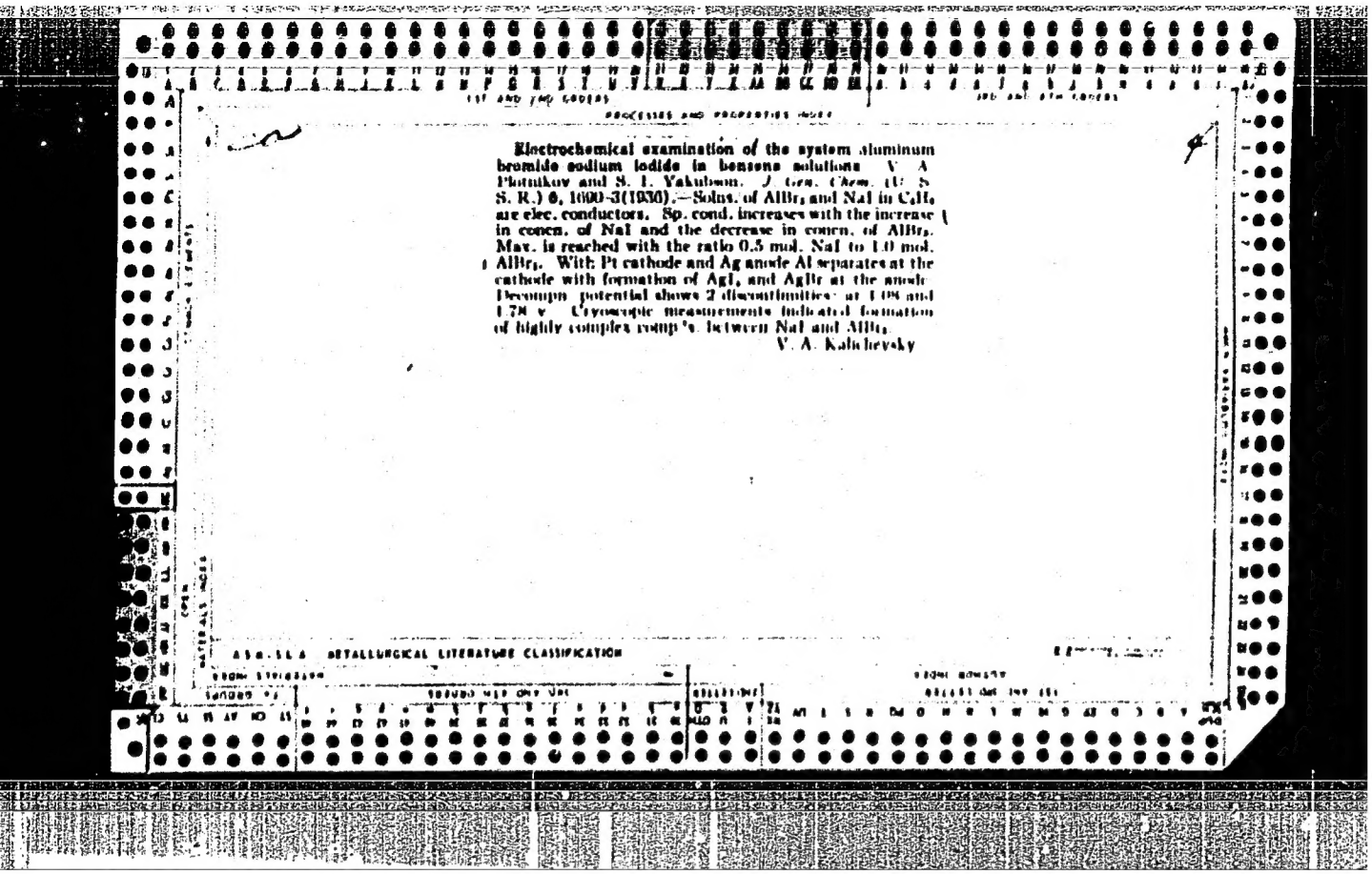
COMMON ELEMENTS

Specific conductivities of solutions of acetamide in bromine. V. A. Plotnikov and S. I. Yakubson. *J. Gen. Chem.* (U. S. S. R.) 5, 1337-41(1935). Sp. conds. (in reciprocal ohms × 10^4) of $AcNH_2$ in Br at 18° were as follows: 0.84% soln. (by wt.), 0.54; 1.7%, 3.72; 3.15%, 10.0; 3.37%, 12.8; 6.07%, 3.0; 7.52%, 37.6; 9.5%, 39.8; 10.60%, 43.3; 11.30%, 42.0; 12.5%, 42.1; 14.0%, 38.0; 15.31%, 36.0; 16.0%, 36.4; 17.34%, 32.2; 21.45%, 28.0; 21.57%, 25.2; 22.06%, 23.1; 25.74%, 18.2; 26.3%, 17.5; 28.81%, 16.0; 30.91%, 12.0; 32.82%, 10.0; 35.21%, 8.57; 37.27%, 7.37. The work of Finkelstein (*C. A.* 20, 3377) on the thermal analysis of the system $AcNH_2$-Br was repeated and extended to include several points above the concns. of $AcNH_2$ employed by F. It is assumed that the compd. $AcNH_2.6Br$ is formed and that it ionizes to give $AcNH_2^{++}$ and Br^-. S. L. Madorsky

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

MATERIALS INDEX

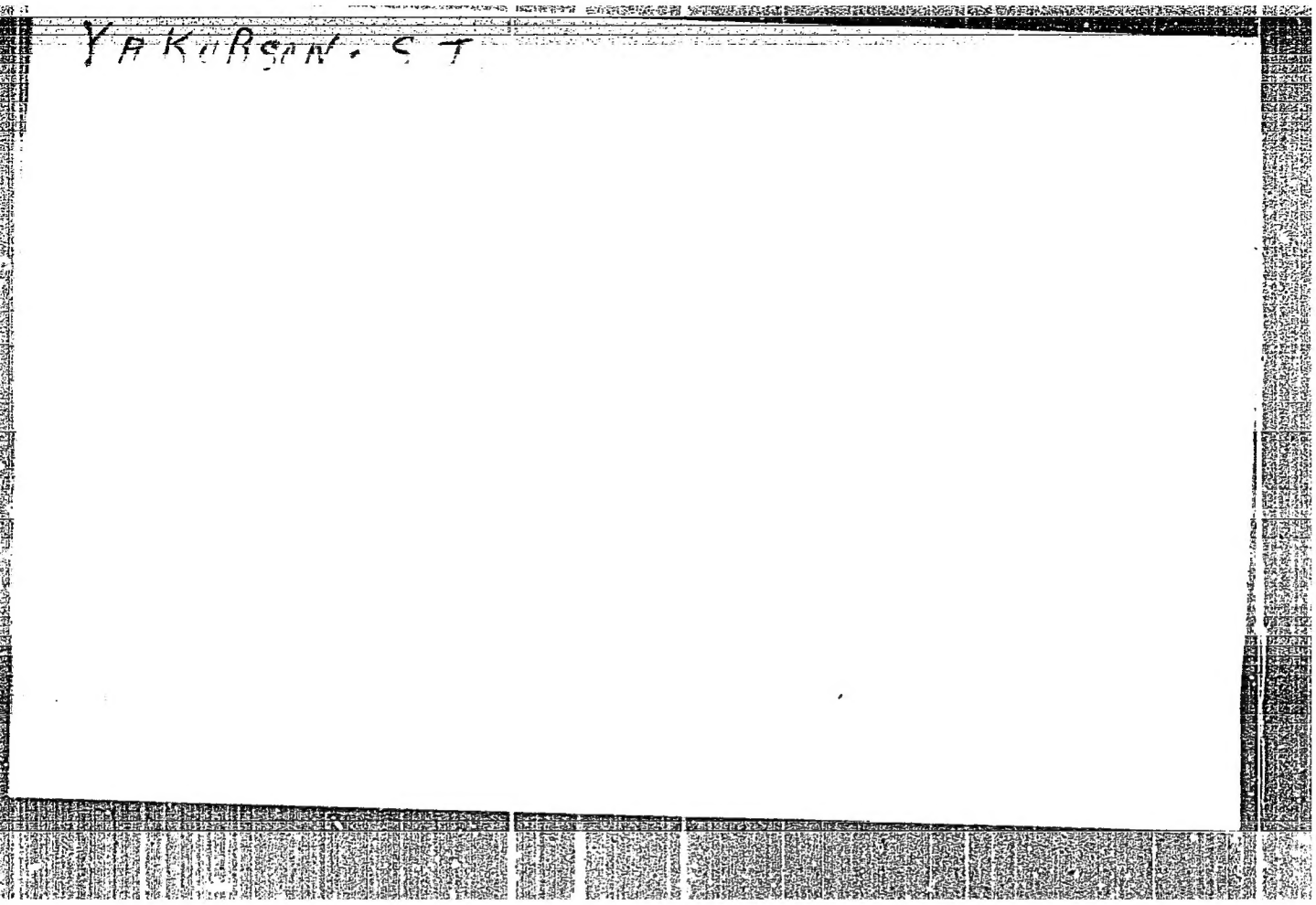


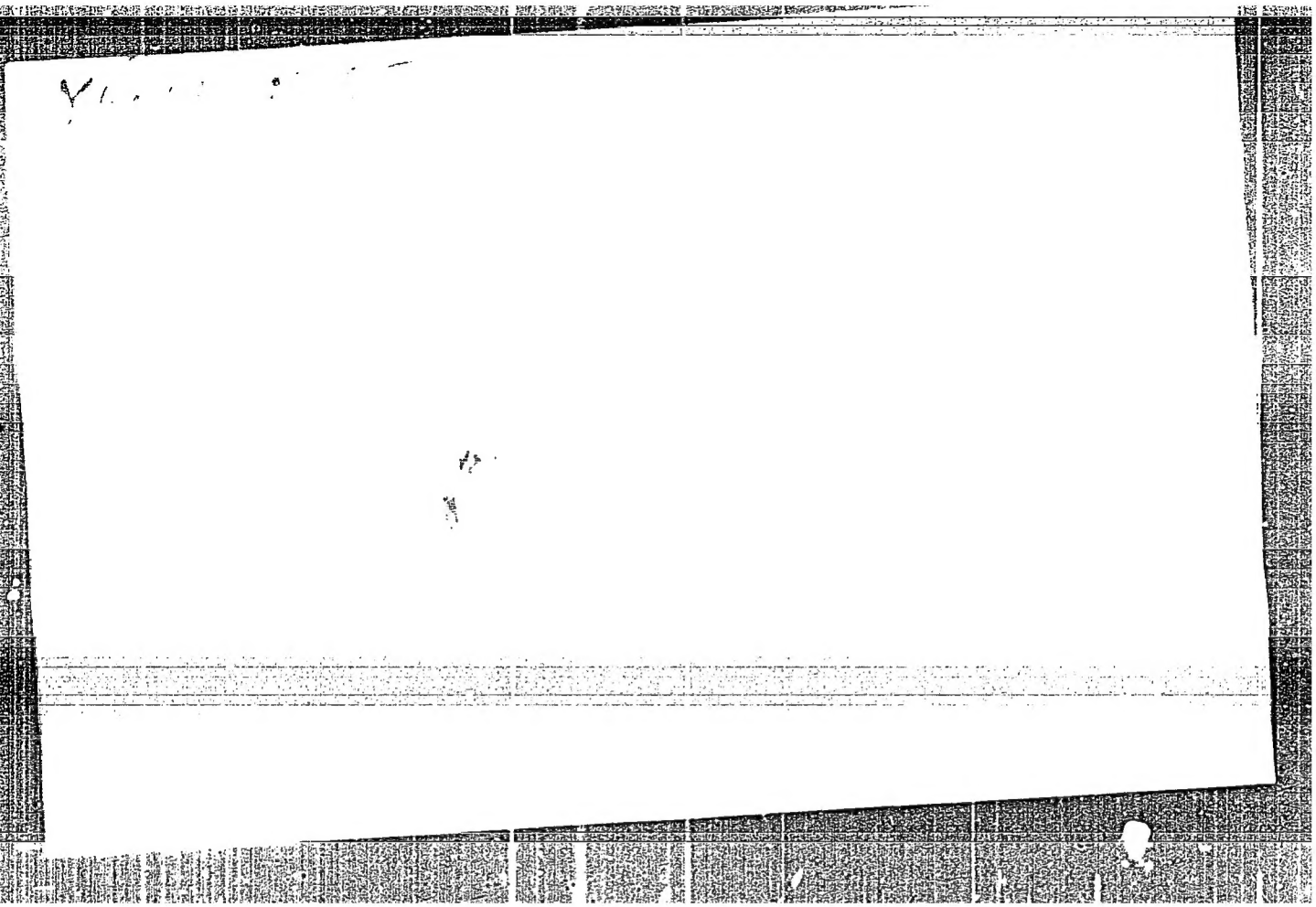


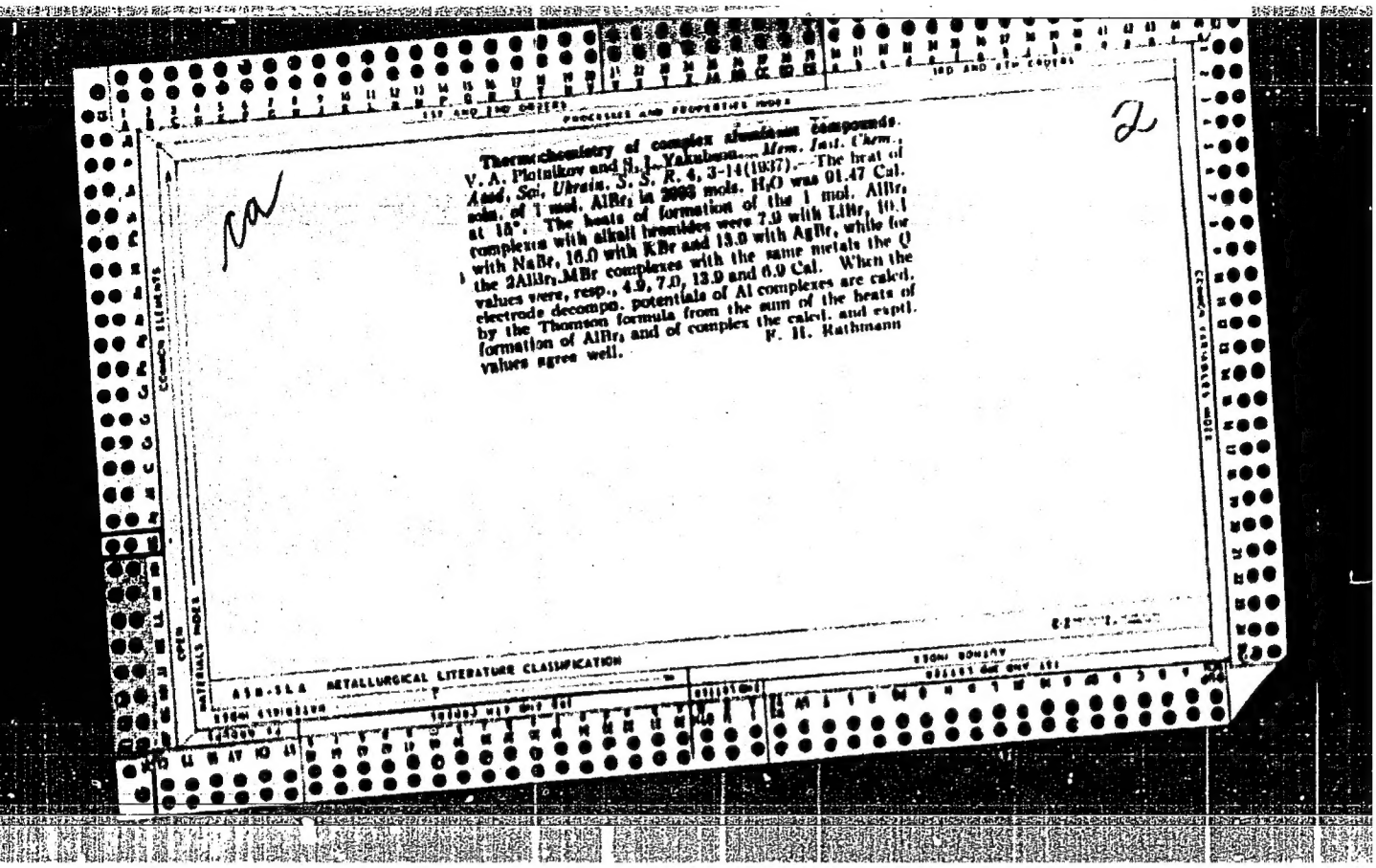
Electrochemical examination of the system aluminum bromide sodium iodide in benzene solutions V. A. Plotnikov and S. I. Yakubson. *J. Gen. Chem. (U. S. S. R.)* **6**, 1600-3(1936).—Solns. of $AlBr_3$ and NaI in C_6H_6 are elec. conductors. Sp. cond. increases with the increase in concn. of NaI and the decrease in concn. of $AlBr_3$. Max. is reached with the ratio 0.5 mol. NaI to 1.0 mol. $AlBr_3$. With Pt cathode and Ag anode Al separates at the cathode with formation of AgI, and $AgBr_2$ at the anode. Decomps. potential shows 2 discontinuities at 1.08 and 1.78 v. Cryoscopic measurements indicated formation of highly complex comp'ds. between NaI and $AlBr_3$.

V. A. Kalichevsky

A53-11A METALLURGICAL LITERATURE CLASSIFICATION

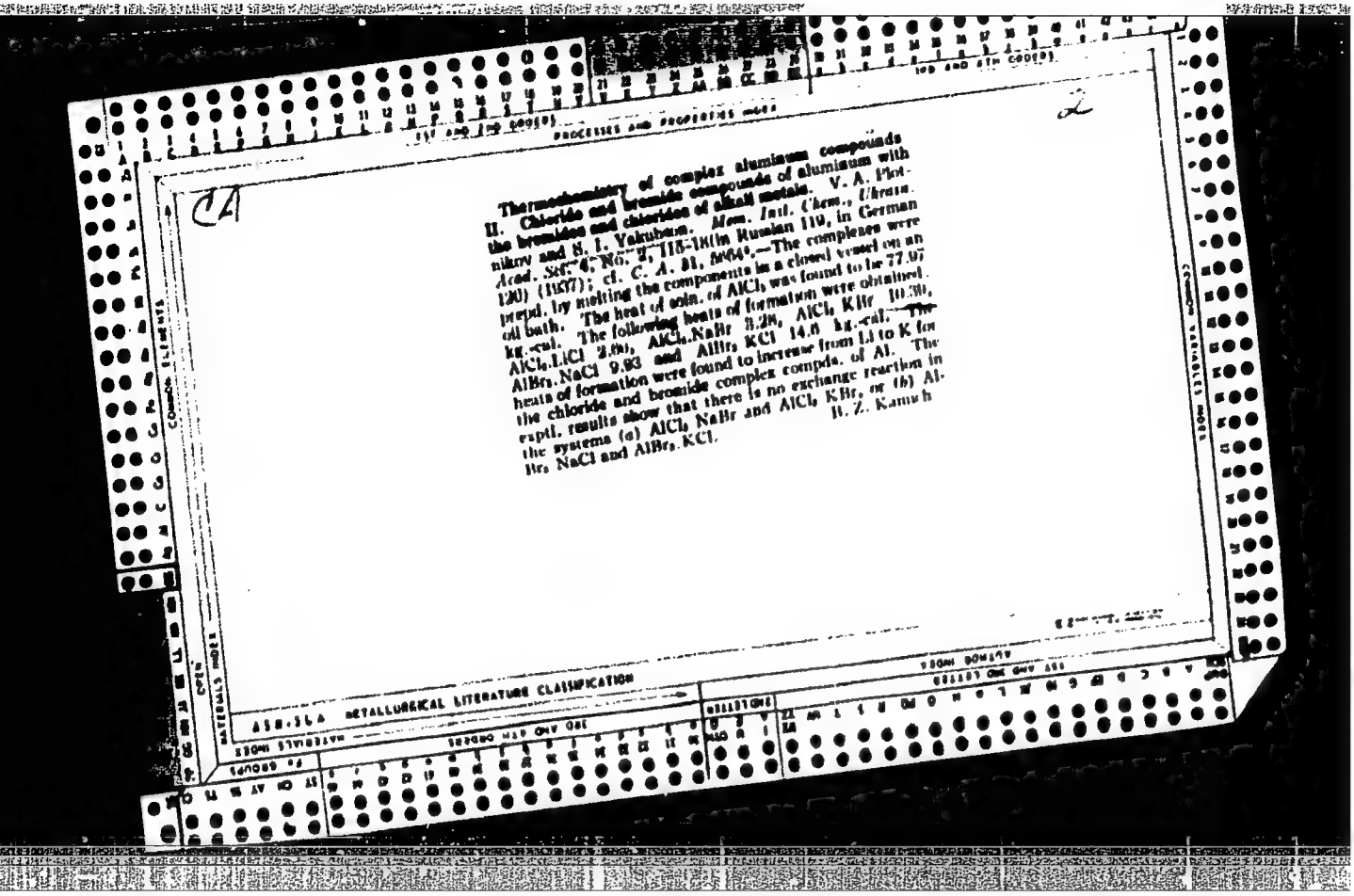






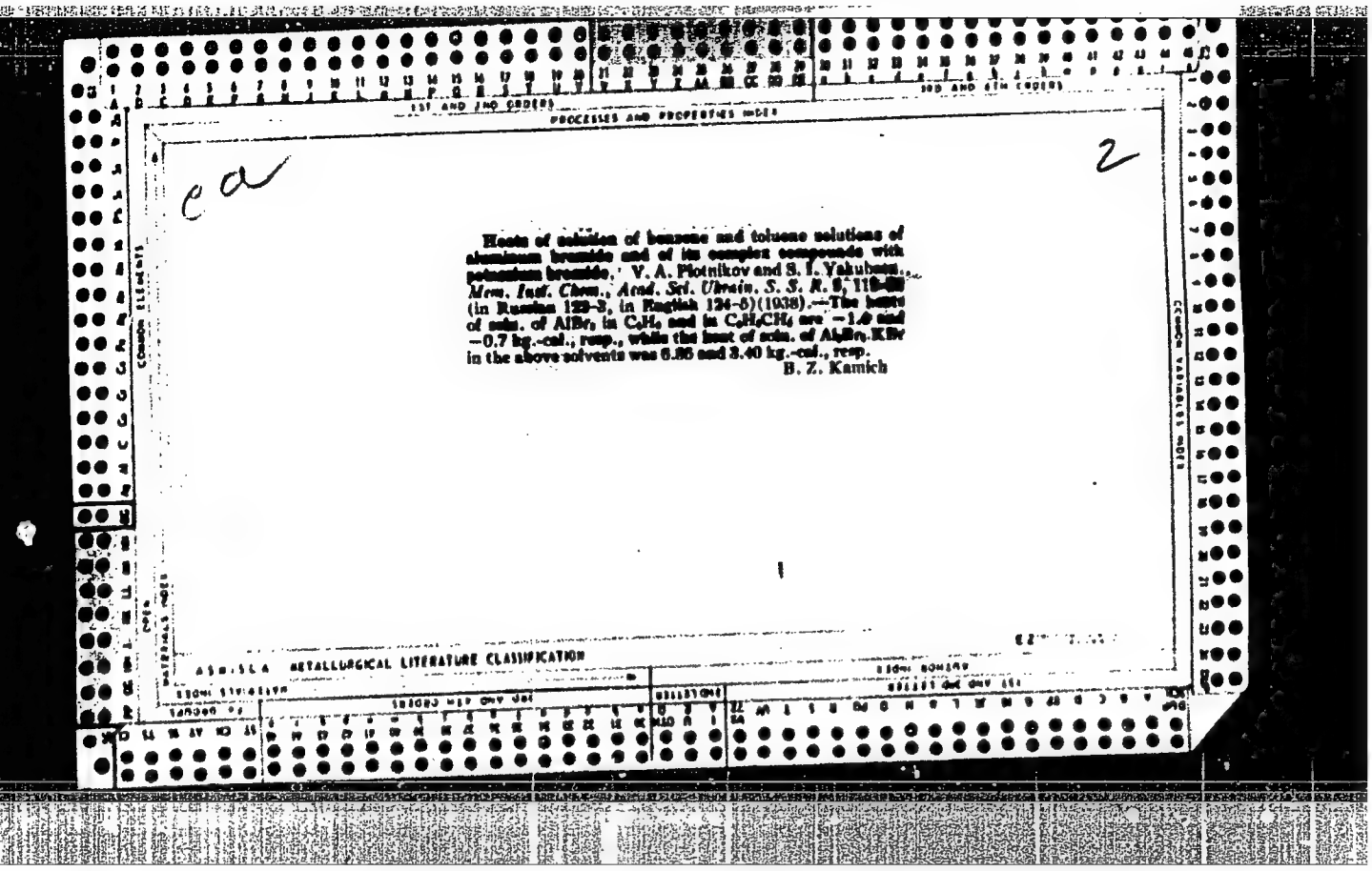
Thermochemistry of complex aluminum compounds. V. A. Plotnikov and N. I. Yakubson. *Mem. Inst. Chem., Acad. Sci. Ukrain. S. S. R.* 4, 3-14(1937).—The heat of soln. of 1 mol. $AlBr_3$ in 2000 mols. H_2O was 91.47 Cal. at 18°. The heats of formation of the 1 mol. $AlBr_3$ complexes with alkali bromides were 7.9 with LiBr, 10.1 with NaBr, 16.0 with KBr and 13.0 with AgBr, while for the $2AlBr_3.MBr$ complexes with the same metals the Q values were, resp., 4.9, 7.0, 13.9 and 6.9 Cal. When the electrode decompn. potentials of Al complexes are calcd. by the Thomson formula from the sum of the heats of formation of $AlBr_3$ and of complex the calcd. and exptl. values agree well.

F. H. Rathmann

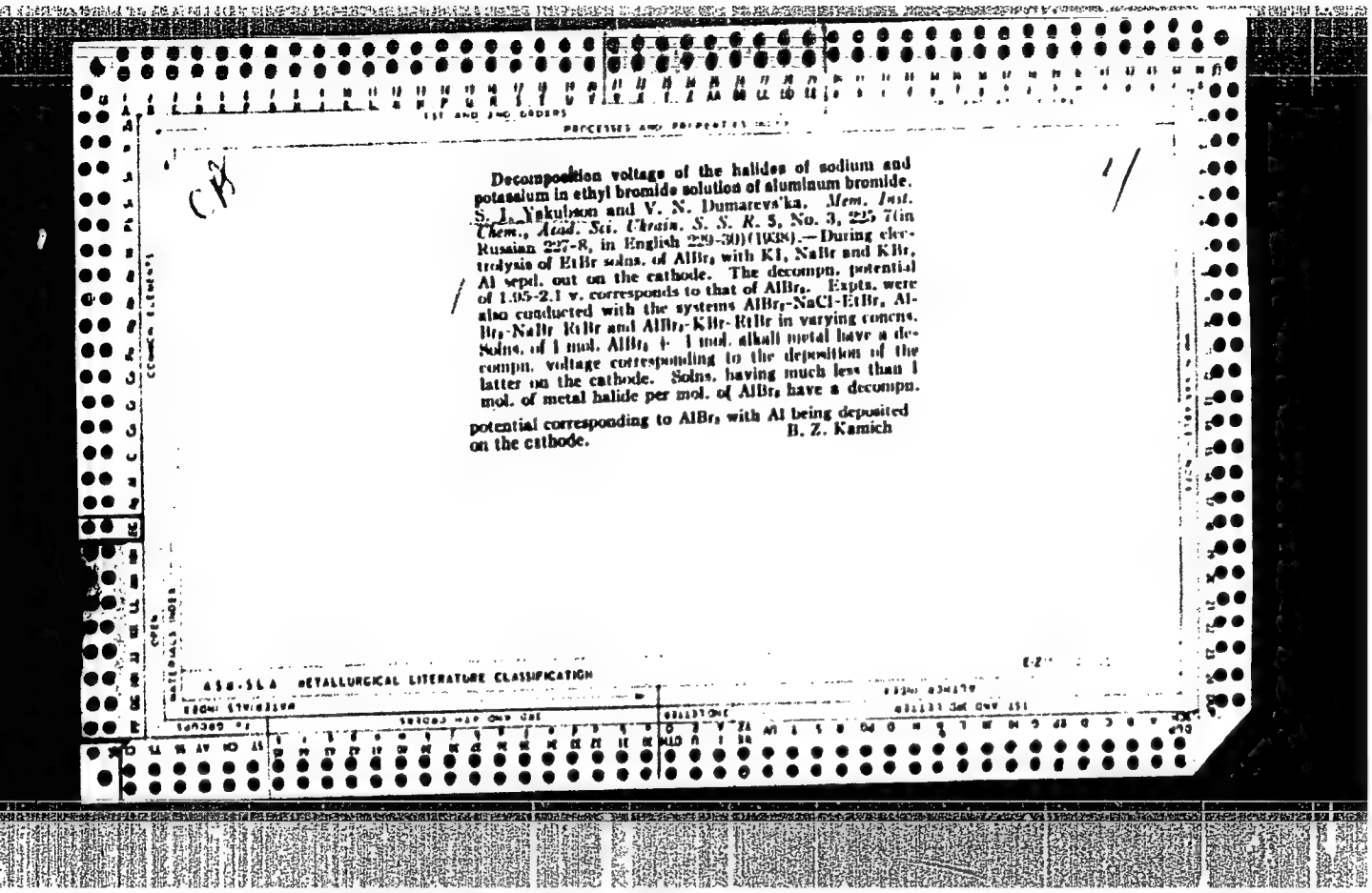


II. Chloride and bromide compounds of aluminum with the bromides and chlorides of alkali metals. V. A. Plotnikov and S. I. Yakubson. *Mem. Inst. Chem., Ukrain. Acad. Sci.* 4, No. 2, 115-18(In Russian 119, in German 120) (1937); cf. *C. A.* 31, 8064.—The complexes were prepd. by melting the components in a closed vessel on an oil bath. The heat of soln. of $AlCl_3$ was found to be 77.97 kg.-cal. The following heats of formation were obtained: $AlCl_3.LiCl$ 2.6, $AlCl_3.NaBr$ 3.2, $AlCl_3.KBr$ 10.3, $AlCl_3.NaCl$ 9.93 and $AlBr_3.KCl$ 14.6 kg.-cal. The heats of formation were found to increase from Li to K for the chloride and bromide complex compds. of Al. The expt. results show that there is no exchange reaction in the systems (a) $AlCl_3$, NaBr and $AlCl_3$, KBr, or (b) $AlBr_3$, NaCl and $AlBr_3$, KCl.

H. Z. Kamush

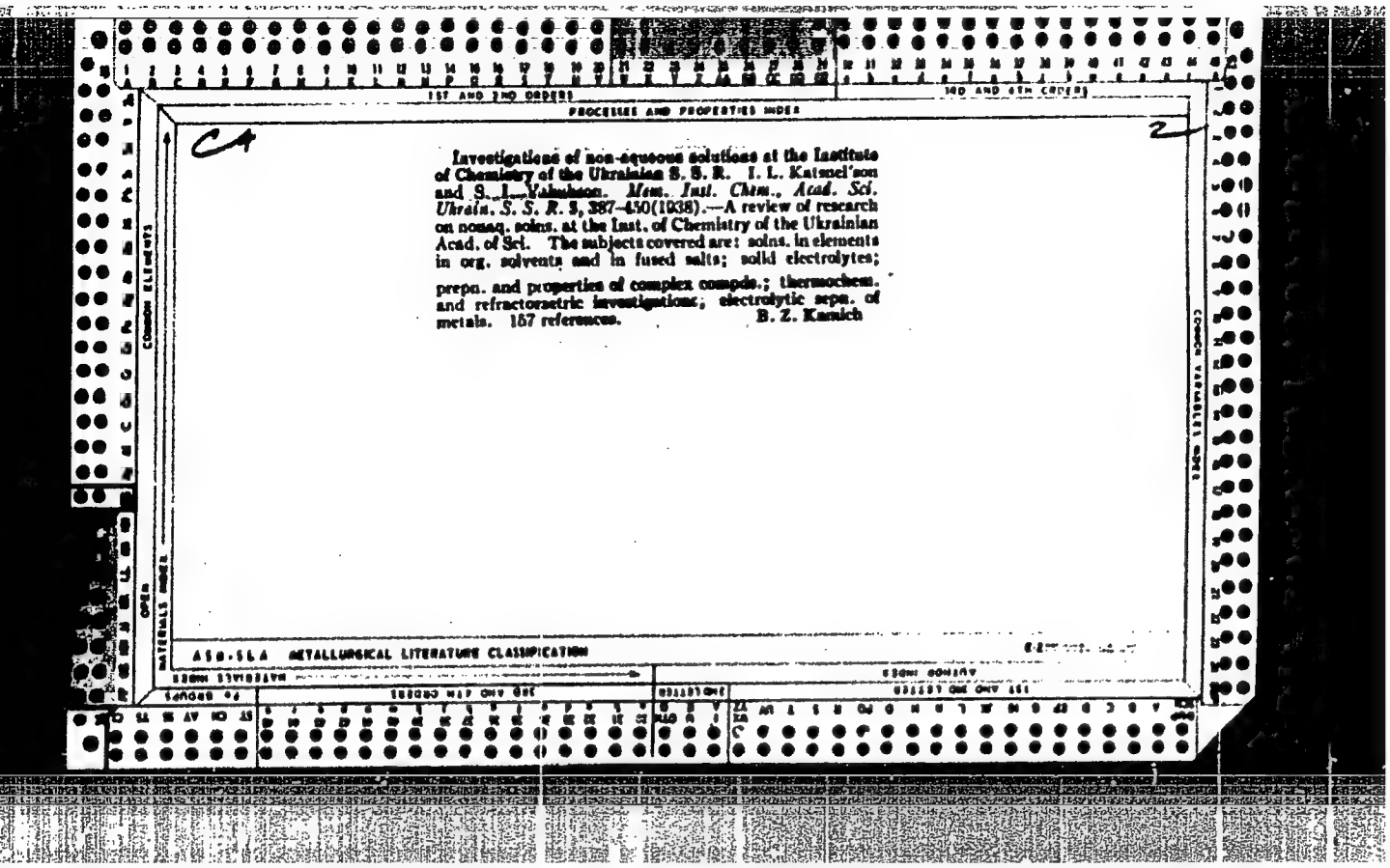


Heats of solution of benzene and toluene solutions of aluminum bromide and of its complex compounds with potassium bromide. V. A. Plotnikov and S. I. Yakubson. *Mem. Inst. Chem., Acad. Sci. Ukrain. S. S. R.* 5, 119-[illegible] (in Russian 123-3, in English 124-6)(1938).—The heats of soln. of $AlBr_3$ in C_6H_6 and in $C_6H_5CH_3$ are −1.0 and −0.7 kg.-cal., resp., while the heat of soln. of $AlBr_3.KBr$ in the above solvents was 6.85 and 3.40 kg.-cal., resp.
B. Z. Kamich



Decomposition voltage of the halides of sodium and potassium in ethyl bromide solution of aluminum bromide. S. I. Yakubson and V. N. Dumareva'ka. *Mem. Inst. Chem., Acad. Sci. Ukrain. S. S. R.* 5, No. 3, 225-7(in Russian 227-8, in English 229-30)(1938).—During electrolysis of EtBr solns. of $AlBr_3$ with KI, NaBr and KBr, Al sepd. out on the cathode. The decompn. potential of 1.95-2.1 v. corresponds to that of $AlBr_3$. Expts. were also conducted with the systems $AlBr_3$-NaCl-EtBr, $AlBr_3$-NaBr-EtBr and $AlBr_3$-KBr-EtBr in varying concns. Solns. of 1 mol. $AlBr_3$ + 1 mol. alkali metal have a decompn. voltage corresponding to the deposition of the latter on the cathode. Solns. having much less than 1 mol. of metal halide per mol. of $AlBr_3$ have a decompn. potential corresponding to $AlBr_3$ with Al being deposited on the cathode.

B. Z. Kamich

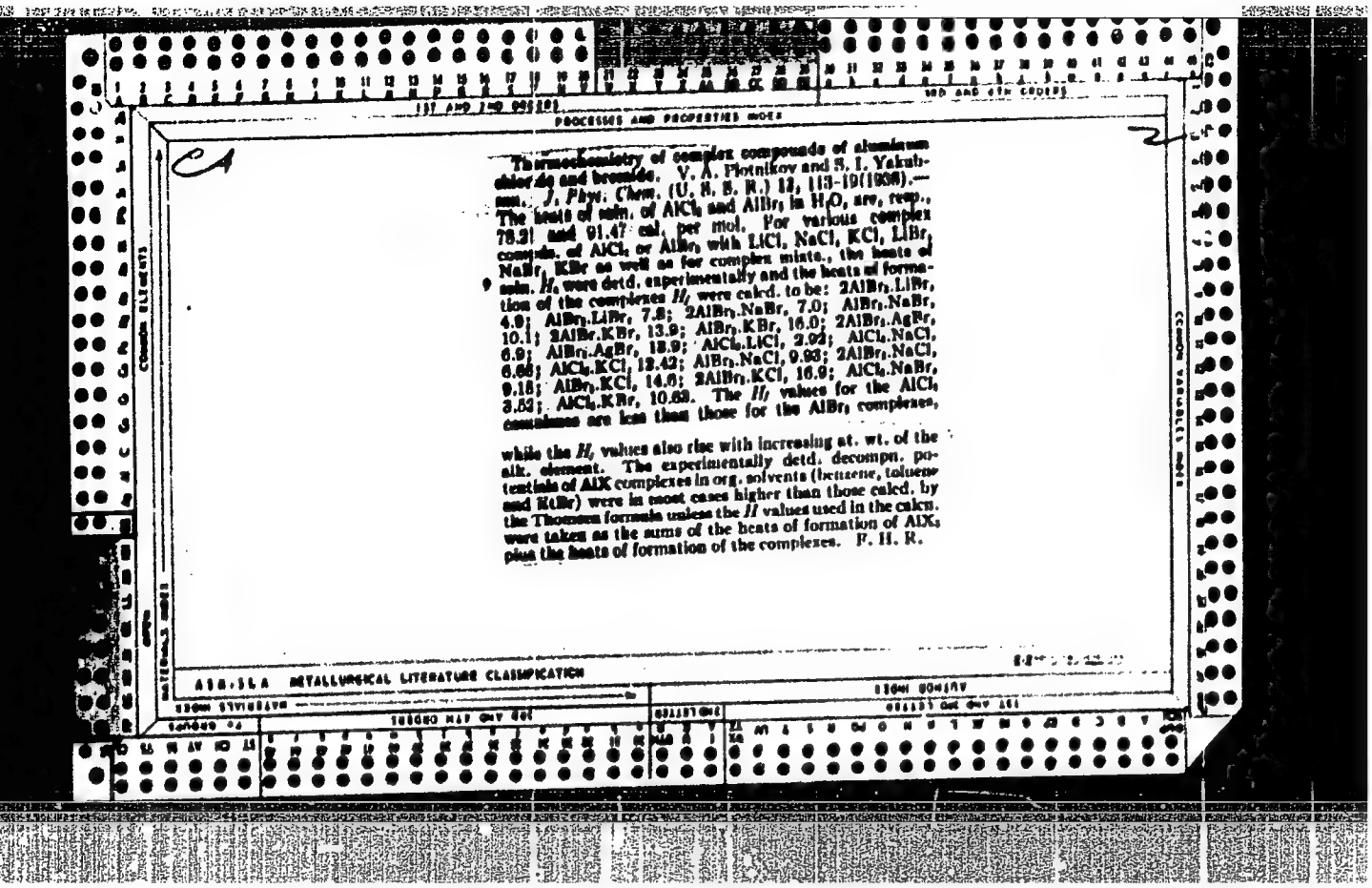


C4

2

Investigations of non-aqueous solutions at the Institute of Chemistry of the Ukrainian S. S. R. I. L. Katsnel'son and S. I. Valushkon. *Mem. Inst. Chem., Acad. Sci. Ukraine, S. S. R.* 3, 387–450(1938).—A review of research on nonaq. solns. at the Inst. of Chemistry of the Ukrainian Acad. of Sci. The subjects covered are: solns. in elements in org. solvents and in fused salts; solid electrolytes; prepn. and properties of complex compds.; thermochem. and refractometric investigations; electrolytic sepn. of metals. 157 references.

B. Z. Kanich

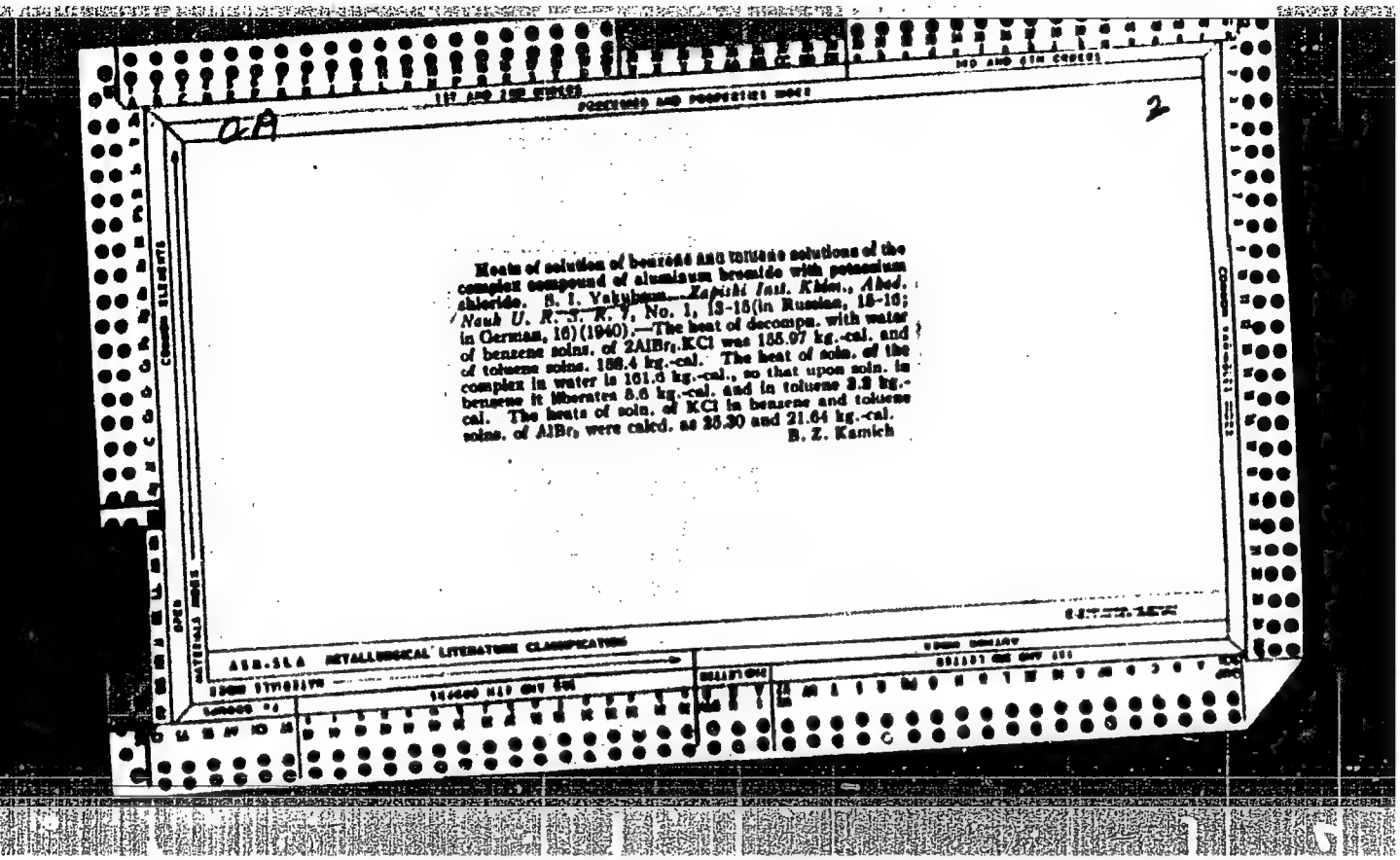


PROCESSES AND PROPERTIES INDEX

CA

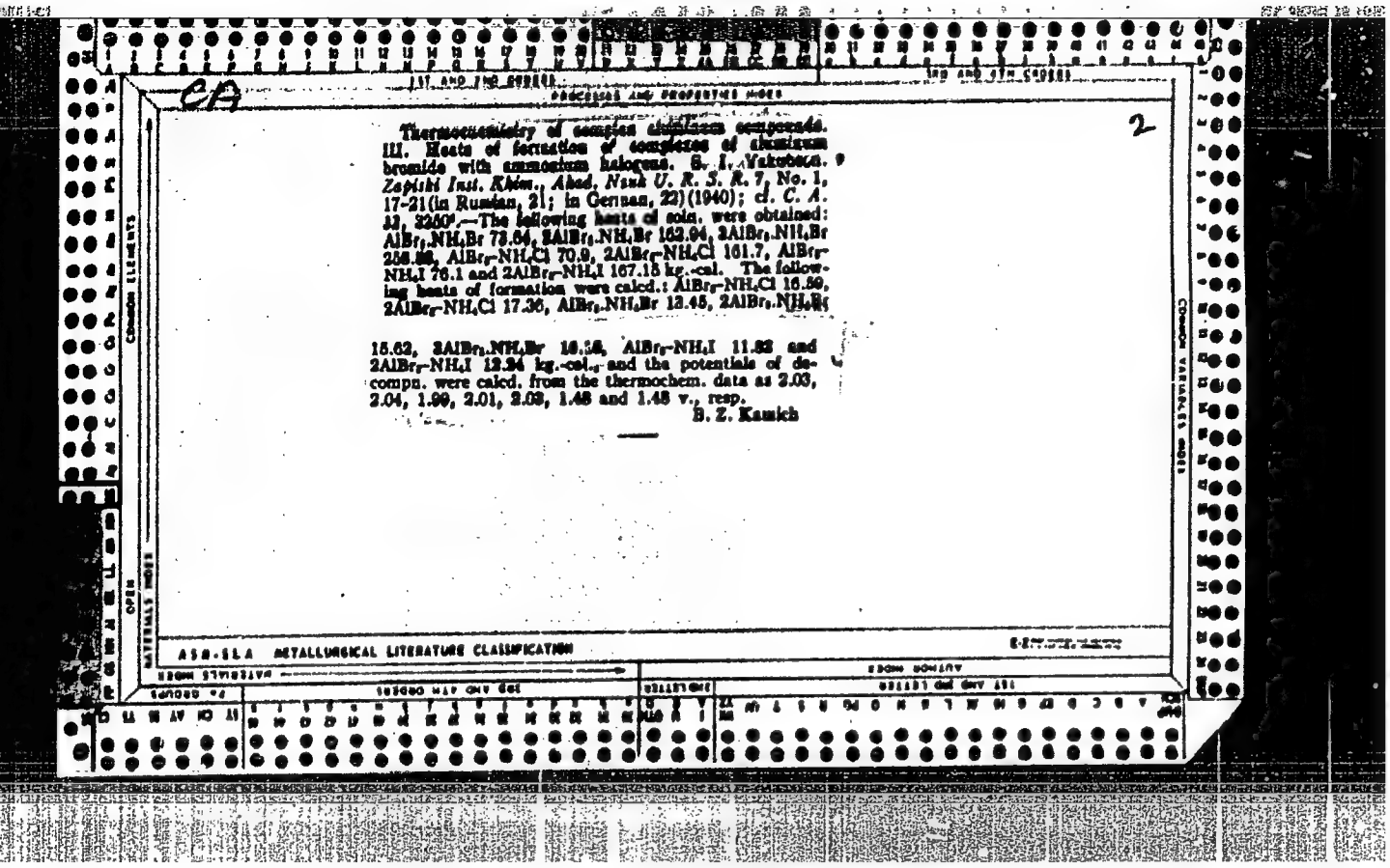
Thermochemistry of complex compounds of aluminum chloride and bromide. V. A. Plotnikov and S. I. Yakubman. *J. Phys. Chem.* (U. S. S. R.) 12, 113-19(1938).—The heats of soln. of $AlCl_3$ and $AlBr_3$ in H_2O, are, resp., 78.21 and 91.47 cal. per mol. For various complex compds. of $AlCl_3$ or $AlBr_3$ with LiCl, NaCl, KCl, LiBr, NaBr, KBr as well as for complex mixts., the heats of soln. H_s were detd. experimentally and the heats of formation of the complexes H_f were calcd. to be: $2AlBr_3.LiBr$, 4.9; $AlBr_3.LiBr$, 7.8; $2AlBr_3.NaBr$, 7.0; $AlBr_3.NaBr$, 10.1; $2AlBr.KBr$, 13.9; $AlBr_3.KBr$, 16.0; $2AlBr_3.AgBr$, 6.9; $AlBr_3.AgBr$, 18.9; $AlCl_3.LiCl$, 2.92; $AlCl_3.NaCl$, 6.86; $AlCl_3.KCl$, 13.42; $AlBr_3.NaCl$, 9.93; $2AlBr_3.NaCl$, 9.18; $AlBr_3.KCl$, 14.6; $2AlBr_3.KCl$, 16.9; $AlCl_3.NaBr$, 3.52; $AlCl_3.KBr$, 10.69. The H_f values for the $AlCl_3$ complexes are less than those for the $AlBr_3$ complexes, while the H_f values also rise with increasing at. wt. of the alk. element. The experimentally detd. decompn. potentials of AlX complexes in org. solvents (benzene, toluene and EtBr) were in most cases higher than those calcd. by the Thomsen formula unless the H values used in the calcn. were taken as the sums of the heats of formation of AlX_3 plus the heats of formation of the complexes. F. H. R.

A58.51A METALLURGICAL LITERATURE CLASSIFICATION



Heats of solution of benzene and toluene solutions of the complex compound of aluminum bromide with potassium chloride. S. I. Yakubson. *Zapiski Inst. Khim., Akad. Nauk U. R. S. R.*, No. 1, 13-16 (in Russian, 15-16; in German, 16) (1940).—The heat of decompn. with water of benzene solns. of $2AlBr_3.KCl$ was 155.97 kg.-cal. and of toluene solns. 159.4 kg.-cal. The heat of soln. of the complex in water is 161.6 kg.-cal., so that upon soln. in benzene it liberates 5.6 kg.-cal. and in toluene 2.2 kg.-cal. The heats of soln. of KCl in benzene and toluene solns. of $AlBr_3$ were calcd. as 25.30 and 21.64 kg.-cal.

B. Z. Kamich



CA

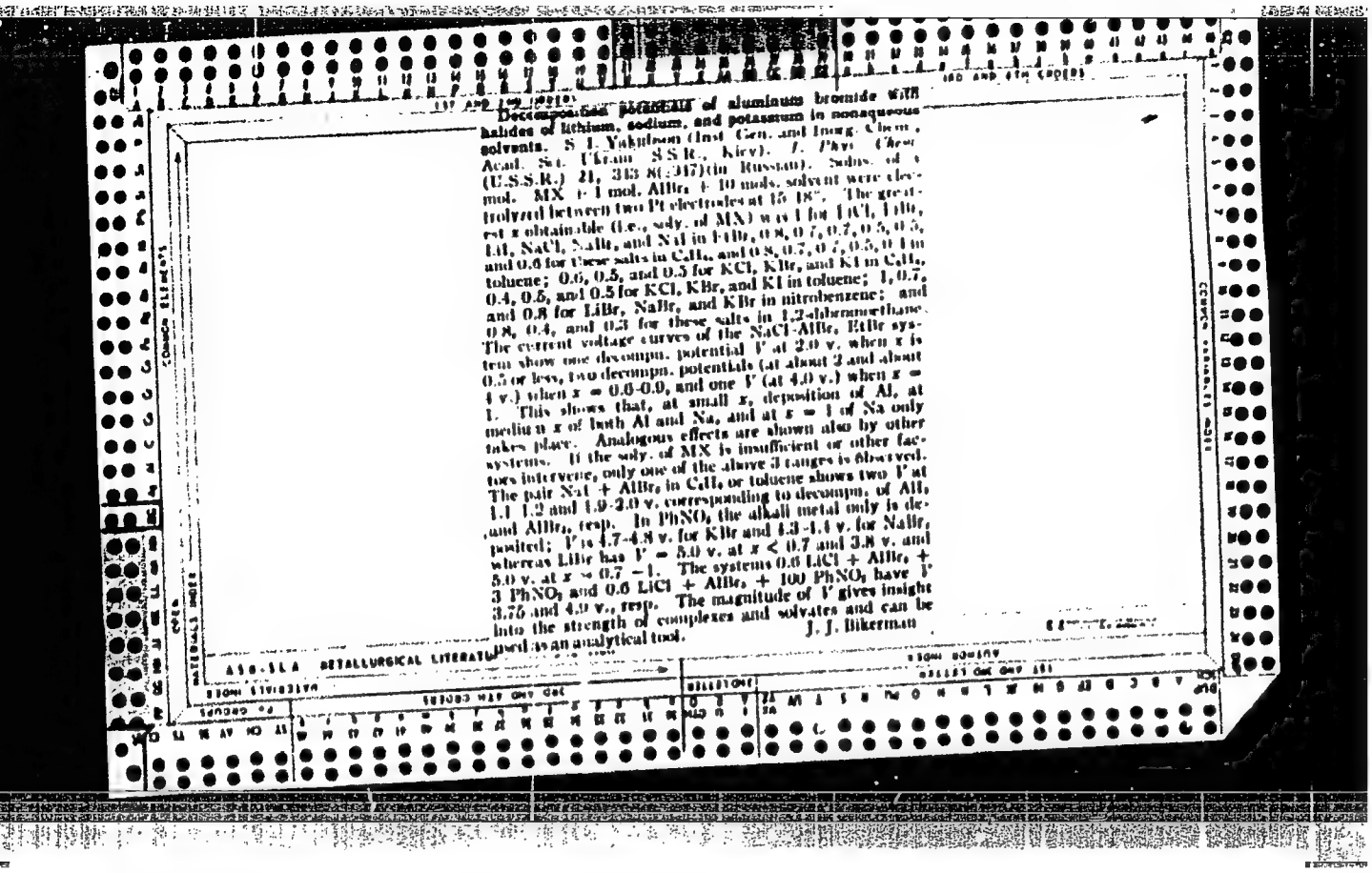
2

Thermochemistry of complex aluminum compounds. III. Heats of formation of complexes of aluminum bromide with ammonium halogens. G. I. Yakubova. *Zaphiki Inst. Khim., Akad. Nauk U. R. S. R.* 7, No. 1, 17-21 (in Russian, 21; in German, 22) (1940); *cf. C. A.* 33, 3260⁹.—The following heats of soln. were obtained: $AlBr_3.NH_4Br$ 73.64, $2AlBr_3.NH_4Br$ 162.94, $2AlBr_3.NH_4Br$ 256.88, $AlBr_3$-NH_4Cl 70.9, $2AlBr_3$-NH_4Cl 161.7, $AlBr_3$-NH_4I 76.1 and $2AlBr_3$-NH_4I 167.15 kg.-cal. The following heats of formation were calcd.: $AlBr_3$-NH_4Cl 16.59, $2AlBr_3$-NH_4Cl 17.36, $AlBr_3.NH_4Br$ 13.45, $2AlBr_3.NH_4Br$ 15.62, $2AlBr_3.NH_4Br$ 16.38, $AlBr_3$-NH_4I 11.82 and $2AlBr_3$-NH_4I 12.34 kg.-cal., and the potentials of decompn. were calcd. from the thermochem. data as 2.03, 2.04, 1.99, 2.01, 2.03, 1.48 and 1.48 v., resp.

B. Z. Kanich

Molecular state of some compounds in ethyl bromide. S. I. Yakubson and V. M. Dymareva'ka. *Zapiski Inst. Khim., Akad. Nauk. Ukr. R.S.R.* 8, No. 2, 15–19(in Russian, 20); in English; 21(1940).—The mol. states of $AlBr_3$, $AsBr_3$, and of the binary systems $AlBr_3$–$AsBr_3$ and $AlBr_3$–NaBr in EtBr were investigated by means of ebullioscopy. The results indicate that $AlBr_3$ forms assocd. mols. whereas $AsBr_3$ exists in the unimol. state. The b.-p. elevation of the soln. contg. $AsBr_3$ and $AlBr_3$ was lower than expected. This might indicate formation of complex compds. of the two bromides. The b.-p. elevation observed in the system $AlBr_3$–NaBr was lower than expected. This was attributed to the formation of complex salts in the soln. The data indicate existence of a complex of the formula $(AlBr_3)_n.(NaBr)_m$ in which n is greater than m. M. O. Holowaty

(1)



Decomposition potentials of aluminum bromide with halides of lithium, sodium, and potassium in nonaqueous solvents. S. I. Yakubson (Inst. Gen. and Inorg. Chem., Acad. Sci. Ukrain. S.S.R., Kiev). *J. Phys. Chem. (U.S.S.R.)* 21, 385-8(1947)(in Russian). Solns. of 1 mol. MX + 1 mol. $AlBr_3$ + 10 mols. solvent were electrolyzed between two Pt electrodes at 15-18°. The greatest x obtainable (i.e., sdy. of MX) was 1 for LiCl, LiBr, LiI, NaCl, NaBr, and NaI in $PhBr$, 0.8, 0.7, 0.7, 0.5, 0.5, and 0.6 for these salts in CdI_2, and 0.8, 0.7, 0.7, 0.5, 0.4 in toluene; 0.6, 0.5, and 0.5 for KCl, KBr, and KI in CdI_2, 0.4, 0.5, and 0.5 for KCl, KBr, and KI in toluene; 1, 0.7, and 0.8 for LiBr, NaBr, and KBr in nitrobenzene; and 0.8, 0.4, and 0.3 for these salts in 1,2-dibromoethane. The current-voltage curves of the NaCl-$AlBr_3$-$PhBr$ system show one decompn. potential V at 2.0 v. when x is 0.5 or less, two decompn. potentials (at about 2 and about 4 v.) when x = 0.6-0.9, and one V (at 4.0 v.) when x = 1. This shows that, at small x, deposition of Al, at medium x of both Al and Na, and at x = 1 of Na only takes place. Analogous effects are shown also by other systems. If the sdy. of MX is insufficient or other factors intervene, only one of the above 3 ranges is observed. The pair NaI + $AlBr_3$ in CdI_2 or toluene shows two V at 1.1-1.2 and 1.9-2.0 v., corresponding to decompn. of AlI_3 and $AlBr_3$, resp. In $PhNO_2$ the alkali metal only is deposited; V is 4.7-4.8 v. for KBr and 4.3-4.4 v. for NaBr, whereas LiBr has V = 5.0 v. at x < 0.7 and 3.8 v. and 5.0 v. at x > 0.7 - 1. The systems 0.6 LiCl + $AlBr_3$ + 3 $PhNO_2$ and 0.6 LiCl + $AlBr_3$ + 100 $PhNO_2$ have V 3.75 and 4.0 v., resp. The magnitude of V gives insight into the strength of complexes and solvates and can be used as an analytical tool.

J. J. Bikerman

YAKUBSON, S. I.

Yakubson, S. I. and Abramova, M. A. The electric conductivity and viscosity of bromine solutions of acetamide and phosphorous pentachloride," Ukr. khim. zhural, Vol. XV, issue 1, 1949, p. 136-48, - Bibliog: 7 items

SO: U-5241, 17 December 1953, (Letopis 'Zhurnal 'nykh Statey, NO. 26, 1949)

YAKUBSON, S.I.; ABRAMOVA, M.A.

Decomposition potentials of aluminum bromide with halides of lithium, sodium, and potassium in nonaqueous solvents. Ukrain. Khim.Zhur. 15, 362-71 '49. (MLRA 5:6)
(CA 47 no.15:7348 '53)

YAKUBSON, S.I.; ABRAMOVA, M.A.

Electrolytic separation of lithium from nonaqueous solutions. Ukrain. Khim. Zhur. 17, 902-10 '51. (MLRA 6:4)
(CA 47 no.22:12053 '53)

1. Inst. Gen. Inorg. Chem., Acad. Sci. Ukr. S.S.R., Kiev.

570

AUTHORS: Yakubson, S.I. and Kostromina, N.A.

TITLE: I. Polarographic Investigation of Rare-Earth Elements and Their Systems with Certain Complex-Forming Substances. (I. Polyarograficheskie Issledovaniya Soley Redkozemel'nykh Elementov i ikh Sistem s Nekotorymi Kompleksoobrazovatelyami).

PERIODICAL: "Zhurnal Neorganicheskoy Khimii" (Journal of Inorganic Chemistry, Vol.II, No.2, pp.349-354. (U.S.S.R.).

ABSTRACT: There are considerable ambiguities in the results of polarographic studies of rare-earth elements with the exception of Eu. The aim of the present work was to see whether the method was applicable to complex-formation investigations for these elements. A visual polarographic set-up was used. Solution of the chlorides of La, Nd, Ce and Sm and Nd sulphate in aqueous solutions without a background and on a tetramethylammonium-iodide background were used: no reaction between these salts and the inert electrolyte was observed. A clear wave, corresponding to reduction according to $M^{3+} + e \rightarrow M^{2+}$ was found for the solutions studied, but there were no signs of one corresponding to reduction to the metallic state. Proportionality between the wave height and the rare-earth ion concentration in the solution was observed. On adding complex-forming substances (citrate and tartrates) to Nd or Ce salts the wave of the simple cation disappears without the appearance of the complex-ion wave.

Card 1/2

I. Polarographic Investigation of Rare-Earth Elements and Their Systems with Certain Complex-Forming Substances. (Cont.)

There are 13 references, 2 of them Russian.

There are 6 figures and 1 table.

Institute of Inorganic Chemistry of the Academy of Sciences of the Ukrainian S.S.R., Complex-Compound Laboratory.

Received 1 November, 1956.

Card 2/2

AUTHORS: Yakubson, S.I., Kostromina, N.A. SOV/ 78-3-7-38/44

TITLE: The Electric Conductivity of the Solutions of Chlorides and Sulfates of Lanthanum and Cerium With Hydrochloric Acid and Sulfuric Acid (Elektroprovodnost' rastvorov khloridov i sul'fatov lantana i tseriya s solyanoy i sernoy kislotami)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1958, Vol 3, Nr 7, pp 1688-1693 (USSR)

ABSTRACT: The electric conductivity of the isomolar solutions of the ternary systems $CeCl_3$-HCl-H_2O, $LaCl_3$-HCl-H_2O, $Ce_2(SO_4)_3$-H_2SO_4-H_2O and $La_2(SO_4)_3$-H_2SO_4-H_2O was investigated with the result that complex compounds were found to exist in the solutions in which the ratio metal salt : acid residue is 1 : 1. The following complex ions probably exist in the solution: MCl_4^- and $[M(SO_4)_2]^-$. It is probable that besides complexes with a ratio of 1 : 1 also other complex ions occur in the solutions. In order to explain the influence exercised by the solvent upon the forming of complexes in the above mentioned systems the determination of the specific electric conductivity of $CeCl_3$-HCl in ethyl alcohol

Card 1/2

The Electric Conductivity of the Solutions of Chlorides and Sulfates of Lanthanum and Cesium With Hydrochloric Acid and Sulfuric Acid SOV/ 78-3-7-38/44

were investigated. The maximum deviation of electric conductivity at 25°C is found with a ratio of $CeCl_3$:HCl = 3 : 2. It may be seen that the solution contains several kinds of complex ions which are in a state of equilibrium. There are 6 figures, 1 table and 16 references, 6 of which are Soviet.

SUBMITTED: July 26, 1957

1. Complex compounds--Electrical properties 2. Complex compounds --Analysis 3. Complex ions--Theory 4. Complex ions--Properties

Card 2/2

AUTHORS: Kostromina, N. A., Yakubson, S. I. SOV/78-3-11-14/23

TITLE: II. Polarographic Investigation of the Salts of the Rare Earths and Their Systems With Some Complexes (II. Polyarograficheskiye issledovaniya soley redkozemel'nykh elementov i ikh sistem s nekotorymi kompleksoobrazovatelyami)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1958, Vol 3, Nr 11, pp 2506-2511 (USSR)

ABSTRACT: The formation process of complex salts of the rare earths in aqueous solutions is investigated by means of polarographic methods, above all of the not especially stable complex salts. An ytterbium chloride solution with 0,1 N-tetramethyl ammonium iodide was investigated polarographically. The half wave potential does not change with an increase in concentration from 1 to 4 mmol/l. Two stages occur at concentrations of 1 - 2 mmol/l. Salts of cerium and lanthanum in aqueous solutions were investigated and it was found that the half wave potential is displaced towards the negative values with an increase in acidity of the solution. A polarogram was plotted for the system $LaCl_3$-HCl-H_2O. A half wave potential of -1,79V occurs

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II. Polarographic Investigation of the Salts of the Rare Earths and Their Systems With Some Complexes

in a neutral solution of lanthanum chloride. Similar investigations were also carried out with the system $CeCl_3$-HCl-H_2O.

The polarograms with solutions of lanthanum sulfate and cerium sulfate were plotted as well; the results show that the half wave potential is displaced towards the negative values. The half wave potentials of the solutions investigated are given in table 3. The data and polarograms show that a displacement of the half wave potential towards the negative values occurs with all salts investigated. If an acid is added, this fact is explained by the formation of complexes between the salts of the rare earths and the corresponding acids. Polarographic investigations were also carried out with the system ytterbium chloride and the salts of organic acids, above all of lactate, glyconate, citrate, and tartrate. In the case of an equimolar ratio of the components in the solution the wave of the ytterbium ion vanishes and the wave of the complex ion occurs. Cation complexes with the general formula $[YbA]^{n+}$ (A = lactate-, glyconate-, citrate-, and tartrate anion) are formed at these concentrations. If an excess of complex formers is added, the

II. Polarographic Investigation of the Salts of the Rare Earths and Their Systems With Some Complexes

wave is displaced towards the negative values. For trivalent ytterbium with lactate- and glyconate ion a complex is formed in the case of a great excess of complex formers, which has the general formula $\left[Yb^{III}A_6\right]^{n-}$. Bivalent ytterbium with equal anions forms the complex $\left[Yb^{II}A_4\right]^{m-}$.

There are 5 figures, 4 tables, and 4 references, 2 of which are Soviet.

SUBMITTED: October 2, 1957

Card 3/3

YAKUBSON, S.I.

Concentration dependence of the decomposition potentials of compounds formed by aluminum bromide with metal halides in nonaqueous solutions. Rab.po khim.rastv.i kompl.soed. no.2: 72-81 '59. (MIRA 13:4)
(Aluminum bromide) (Halides) (Electromotive force)

5(1,4) P.2- PHASE I BOOK EXPLOITATION SOV/3413

Akademiya nauk Ukrainskoy SSR. Institut obshchey i neorganicheskoy khimii

Raboty po khimii rastvorov i kompleksnykh soyedineniy, vyp. 2 (Papers on the Chemistry of Solutions and Complex Compounds, Nr 2) Kiyev, 1959. 229 p. Errata slip inserted, 2,000 copies printed.

Resp. Ed.: Ya.A. Fialkov (Deceased) Corresponding Member, Ukrainian SSR, Academy of Sciences; Ed. of Publishing House: Z.S. Pokrovskaya; Tech. Ed.: M.I. Yefimova.

PURPOSE: This book is intended for research scientists, teachers in schools of higher education and technical schools, aspirants, and students of advanced chemistry courses.

COVERAGE: The collection contains 9 articles which review work conducted at the Institute for General and Inorganic Chemistry, Ukrainian Academy of Sciences, on electrolytic aqueous and nonaqueous solutions, the chemistry of complex compounds,

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analytical chemistry, and fused electrolytes. The collection also contains an article entitled "Electrochemical Properties of Aluminum Halides in Nonaqueous Solutions", by V.A. Plotnikov (Deceased). Figures, tables and references accompany each article. No personalities are mentioned.

TABLE OF CONTENTS:

Papers on the Chemistry (Cont.) SOV/3413

AVAILABLE: Library of Congress

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3-30-60

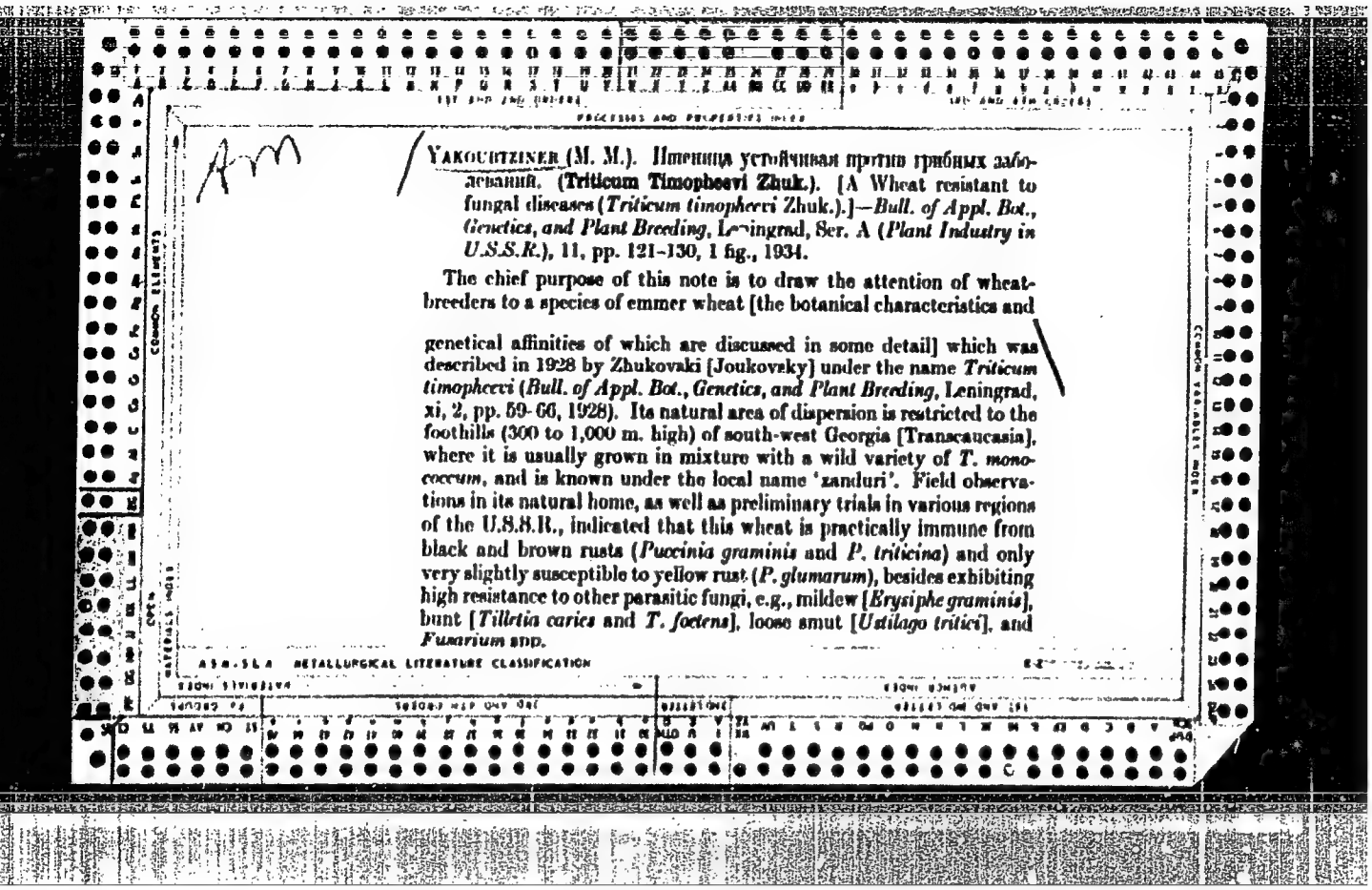
YAKUBSON, S. Ya., inzh.

Mechanized data processing in the press shop of the Moscow Automobile Plant. Mekh.i avtom.proizv. 18 no. 5:48-50 My '64. (MIRA 17:5)

PALLADI, G.A.; YAKUBSON, T.Z.

Use of the vacuum apparatus; based on the data of obstetric institutions in Kishinev. Zdravookhranenie 5 no.3:45-47 My-Je '62. (MIRA 16:1)

1. Iz rodil'nogo otdeleniya 1-y bol'nitsy Kishineva (glavnyy vrach I.N.Revin).
(OBSTETRICS--APPARATUS AND INSTRUMENTS)



YAKOUTZINER (M. M.). Именица устойчивая против грибных заболеваний. (**Triticum Timopheevi Zhuk.**). [A Wheat resistant to fungal diseases (*Triticum timopheevi* Zhuk.).]—*Bull. of Appl. Bot., Genetics, and Plant Breeding*, Leningrad, Ser. A (*Plant Industry in U.S.S.R.*), 11, pp. 121–130, 1 fig., 1934.

The chief purpose of this note is to draw the attention of wheat-breeders to a species of emmer wheat [the botanical characteristics and genetical affinities of which are discussed in some detail] which was described in 1928 by Zhukovski [Joukovsky] under the name *Triticum timopheevi* (*Bull. of Appl. Bot., Genetics, and Plant Breeding*, Leningrad, xi, 2, pp. 59–66, 1928). Its natural area of dispersion is restricted to the foothills (300 to 1,000 m. high) of south-west Georgia [Transcaucasia], where it is usually grown in mixture with a wild variety of *T. monococcum*, and is known under the local name 'zanduri'. Field observations in its natural home, as well as preliminary trials in various regions of the U.S.S.R., indicated that this wheat is practically immune from black and brown rusts (*Puccinia graminis* and *P. triticina*) and only very slightly susceptible to yellow rust (*P. glumarum*), besides exhibiting high resistance to other parasitic fungi, e.g., mildew [*Erysiphe graminis*], bunt [*Tilletia caries* and *T. foetens*], loose smut [*Ustilago tritici*], and *Fusarium* spp.

YAKUBTSINER, M. M.

Yakubtsiner, M. M. "Approbation of varieties in the light of the Michurin doctrine," [Selection of grain crops], Selektsiya i semenovodstvo, 1949, No. 3, p. 4-10

SO: U-3566, 15 March 53, (Letopis 'Zhurnal 'nykh Statey, No. 14, 1949).

USSR/Biology, Agricultural - Genetics Jan/Feb 52

"Data Relative to the Problem of Occurrence of Rye Grains in Wheat Ears," M. M. Yakubtsiner, Wheat Lab, All-Union Inst of Plant Breeding, Leningrad

"Agrobiologiya" No 1, pp 24-38

Following T. D. Lysenko's results on contamination of wheat with rye in mountain areas (1949), a systematic search for rye grains in wheat ears was carried out. In 11 rayons of the Caucasus, rye grains were detected on threshing wheat. In 5 of these rayons, rye grains were detected on wheat ears in individual cases. In no single case, more than one or a max of 2 rye grains per wheat ear was found. In almost all

213T4

YAKUBTSINER, M. M.

cases, rye grains were found in soft wheat, but in some cases hard wheat also contained rye. Rye grains that developed on wheat ears gave rise to typical rye plants, but in some cases grains which resembled rye grew into wheat plants. Plants intermediate between wheat and rye could never be grown from any of the grains mentioned above. In the course of this search, rye-wheat hybrids were also discovered, but they proved completely sterile. [Pictures of individual wheat ears and of all wheat and rye grains obtained from these particular ears (according to the captions) accompany the test.]

213T4

YAKUBTSINER, M.M.; SAVITSKAYA, V.S.

Wheat

Late fall sowing of spring wheat. Sov. agron. 10 no. 10, 1952.

9. Monthly List of Russian Accessions, Library of Congress, December 1952, 1953. Unclassified.

USSR/Biology, Agricultural - Wheat, Genetics Mar 52

"Wheat," M. M. Yakubtsiner, Cand Agr Sci

"Nauka i Zhizn'" Vol XIX, No 3, pp 16-19

Grains of USSR wheat, particularly of wheat grown in the southeast, contain 15-26% of protein, while wheat grown in foreign countries as a rule does not contain more than 8-15% of protein. USSR scientists are concgon the selection of hard wheats, intervariety crossing to create cold-resistant wheats, and development of bushy varieties which are highly resistant to wind and rain and give very high yields. T. D. Lysenko proved that winter wheat

216T1

can be transformed into wheat suitable for spring planting. Wheat-rye, wheat-quack grass, and wheat-rye-quack grass hybrids have been developed and are being cultivated. The yields of wheat achieved in individual instances in the USSR are the highest in the world (e.g., 101 centners per hectare).

YAKUBTSINER, M. M.

216T1

1. YAKUBTSINER, M. M.

2. USSR (600)

4. Wheat

7. New regional wheat varieties and their identification. Sel. i sem. 19 No. 11, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

1. YAKULETSINER, M. M. M.

2. USSR (600)

3. Wheat

4. Development of remose varieties in plantings of hard wheats. Dokl.Akad. sel'-khoz. 18 No. 2, 1953.

9. Monthly List of Russian Accessions, Library of Congress, June 1953. Unclassified.

YAKUBTSINER, M.M., kandidat sel'skokhozyaystvennykh nauk.

Studying ancient agriculturists. Nauka i zhizn' 20 no.10:26-28 O '53.
(MLRA 6:10)
(Agriculture, Primitive)

YAKUBTSINER, M.M.

USSR/Cultivated Plants - Grains

M-4

Abs Jour : Ref Zhur - Biol., No 1, 1958, No 1480

Author : M.M. Yakubtsiner
Inst : All-Union Agricultural Academy imeni V.A. Lenin
Title : New Botanical Forms of Wheat, Valuable in Selection

Orig Pub : Byul. Vses. in-ta rasteniye vodstva. VASKhNIL, 1956, No 2, 33-34

Abstract : A short description of those forms is given which have been evolved in the All-Union Plant Cultivation Institute from Yugoslavian specimens of the erythrospermum variety, distinguished for its large grain (its absolute weight is 65-66 grams), its elongated spikelets and bract scales, large flumes (12 to 13 cm in length), its 3-4 caryopsides. The specimens are resistant to wheat mildew and rust. The author calssifies these forms, both the uniform and large grain specimens from the humid regions of Northern Italy, into a new subspecies Tr. aestivum L. ssp. grandisemineum Sakubz. ssp. nova. The diagnosis of the new subspecies is: Tr. aestivum L, ssp. grandisemineum Sakubz. Differt a ssp. indoeropeum Vav glumis majoribus 12-

Card : 1/2

USSR/Cultivated Plants - Grains

M-4

Abs Jour : Ref Zhur - Biol., No 1, 1958, No 1480

13 mm longis caryopsis 10-11 mm longis, spec. typ. Jugo-
Slavia, Italia.

Card : 2/2

YAKUBTSINER, M.M.

YAKUBTSINER, M.M.; ZHUKOVSKIY, P.M., akademik, red.; SINYAKOVA, L.A., red.; CHUMAYEVA, Z.V., tekhn.red.

[Wheat in the U.S.S.R.] Pshenitsa v SSSR. Moskva, Gos.izd-vo sel'khoz. lit-ry, 1957. 632 p. (MIRA 11:3)
(Wheat)

YAKUBTSINER, M.M.; UDACHIN, R.A.

Value of Central Asian wheats as breeding material for Uzbekistan.
Uzb. biol. zhur. no.3:48-52 '59. (MIRA 12:11)

1.Sredneaziatskaya opytnaya stantsiya Vsesoyuznogo instituta rasteniyevodstva (VIR).
(Uzbekistan--Wheat breeding)

YAKUBTSINER, M.M.

A contribution to the study of Chinese wheats. Bot.zhur. 44 no.10:1425-1436 O '59. (MIRA 13:4)
(China--Wheat)

YAKUBTSINER, M.M.

Possibilities for increasing the production of durum and strong wheat. Zemledelie 8 no.1:58-66 Ja '60. (MIRA 13:4)

1. Vsesoyuznyy institut rasteniyevodstva.
(Wheat)

YAKUBTSINER, M.

Black grain. Znan.sila 35 no.6:36 Je '60. (MIRA 13:7)
(Excavations (Archaeology))
(Agriculture)

PUMPYANSKIY, Aleksandr Yakovlevich, kand.tekhn.nauk; YAKUBTSINER, M.M., kand.sel'skokhoz.nauk, red.; FOMICHEV, A.G., red.izd-va; BELOGUROVA, I.A., tekhn.red.

[Baking qualities of wheat and flour; verbatim report] Khlebopekarnye kachestva pshenitsy i muki; stenogramma doklada. Pod red. M.M.Iakubtsinera. Leningrad, Leningr.Dom nauchno-tekhn. propagandy, 1961. 32 p. (MIRA 14:12)

(Wheat) (Flour)

YAKUBTSINER, M.M. (Leningrad)

"Environment and plant development" by V.I.Razumov. Reviewed by M.M.IAkubtsiner. Agrobiologiia no.3:474-475 My-Je '62. (MIRA 15:10)

(PLANT PHYSIOLOGY)
(RAZUMOV, V.I.)

YAKUBTSINER, M.M. Doktor sel'skokhozyaystvennykh nauk

Anniversary of a talented plant breeder. Agrobiologiia no.6: 925-927 N-D '62. (MIRA 16:1)

1. Vsesoyuznyy institut rasteniyevodstva, Leningrad.
(Skalozubova, Anna Nikolaevna, 1902-)

YAKUBTSINER, M.M., doktor sel'skokhozyaystvennykh nauk

"Agriculture of India" by D.V.Ter-Avanesian. Reviewed by M.M. IAkubtsiner. Zemledelie 25 no.2:94-95 F '63. (MIRA 16:5)
(India--Agriculture) (Ter-Avanesian, D.V.)

VAVILOV, Nikolay Ivanovich, akademik; YAKUBTSINER, M.M., doktor sel'khoz. nauk, otv. red. toma; LEPIN, T.K., doktor sel'khoz.nauk, otv. red. toma; YAKOVLEVA, V.M., red.izd-va; BOCHEVER, V.T., tekhn. red.

[World resources of cereal, pulse crop, and flax varieties and their use in breeding] Mirovye resursy sortov khlebnykh zlakov, zernovykh bobovykh, l'na i ikh ispol'zovanie v selektsii. Moskva, Izd-vo "Nauka." Vol.2. [Wheat] Pshenitsa. 1964. 122 p. (MIRA 17:4)

YAKUBTSINER, M.M.; CHESNOKOV P.G.; FEDOTOVA, T.I.

Georgii Evgen'evich Spangenberg-Spagorov; 1889 - . Zashch. rast. ot vred. i bol. 9 no.10:59 '64 (MIRA 18:1)

YAKUBTSINER, M.M., doktor sel'skokhoz. nauk

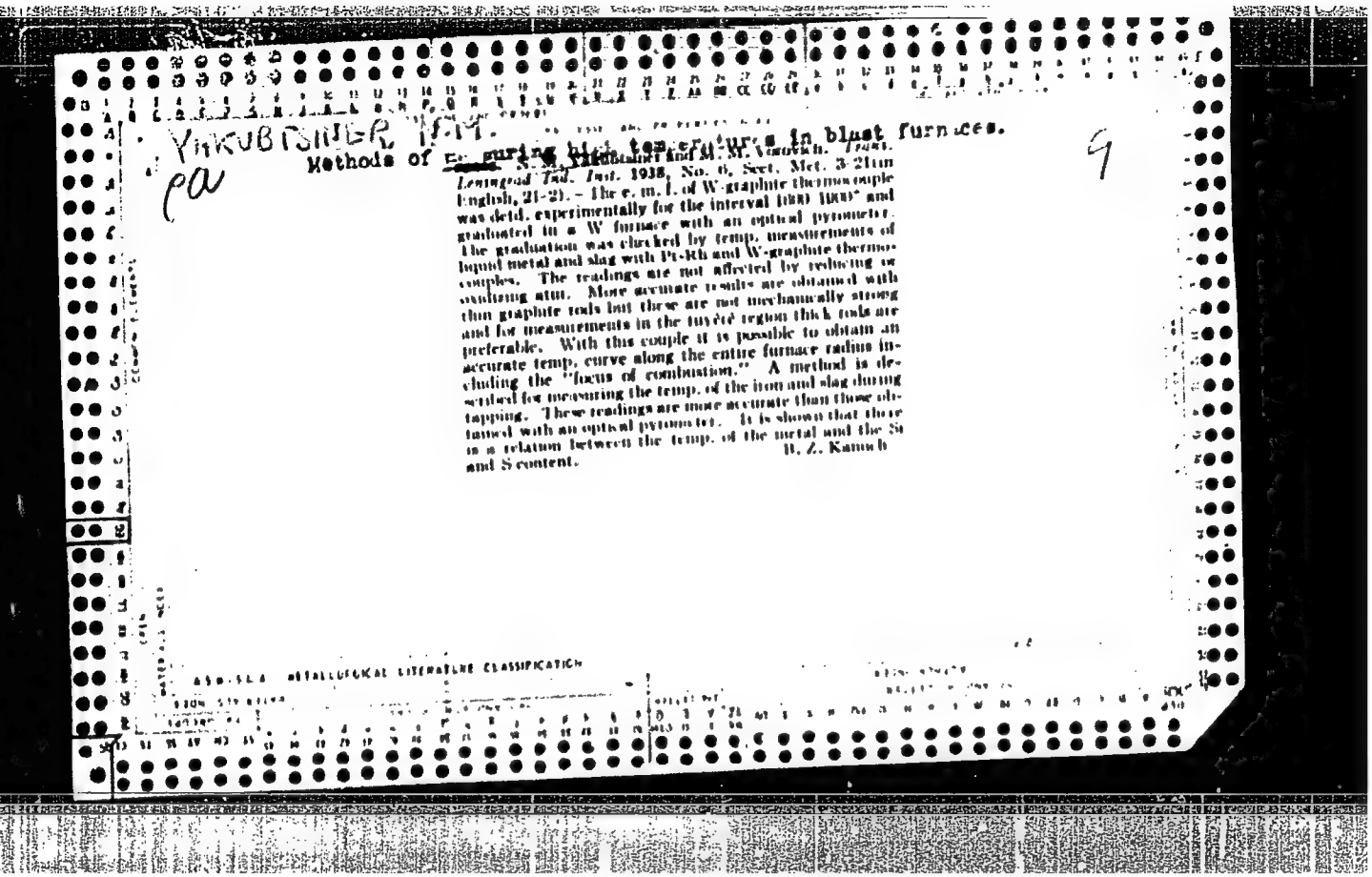
Understanding the variation of two-way wheat. Agrobiologiia no.5:661-663 S-O '65. (MIRA 18:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut rasteniyevodstva, Leningrad.

YAKUBTSINER, M.M.; FEDOTOVA, T.I.; CHES[illegible], P.I.

In memory of Georgii Evgen'evich Spa[illegible]; [illegible] anniversary of his birth. Bot. zhur. 50 n[illegible]

1. Vsesoyuznyy institut zashchity rastenii [illegible] rastoniyevodstva, Leningrad.



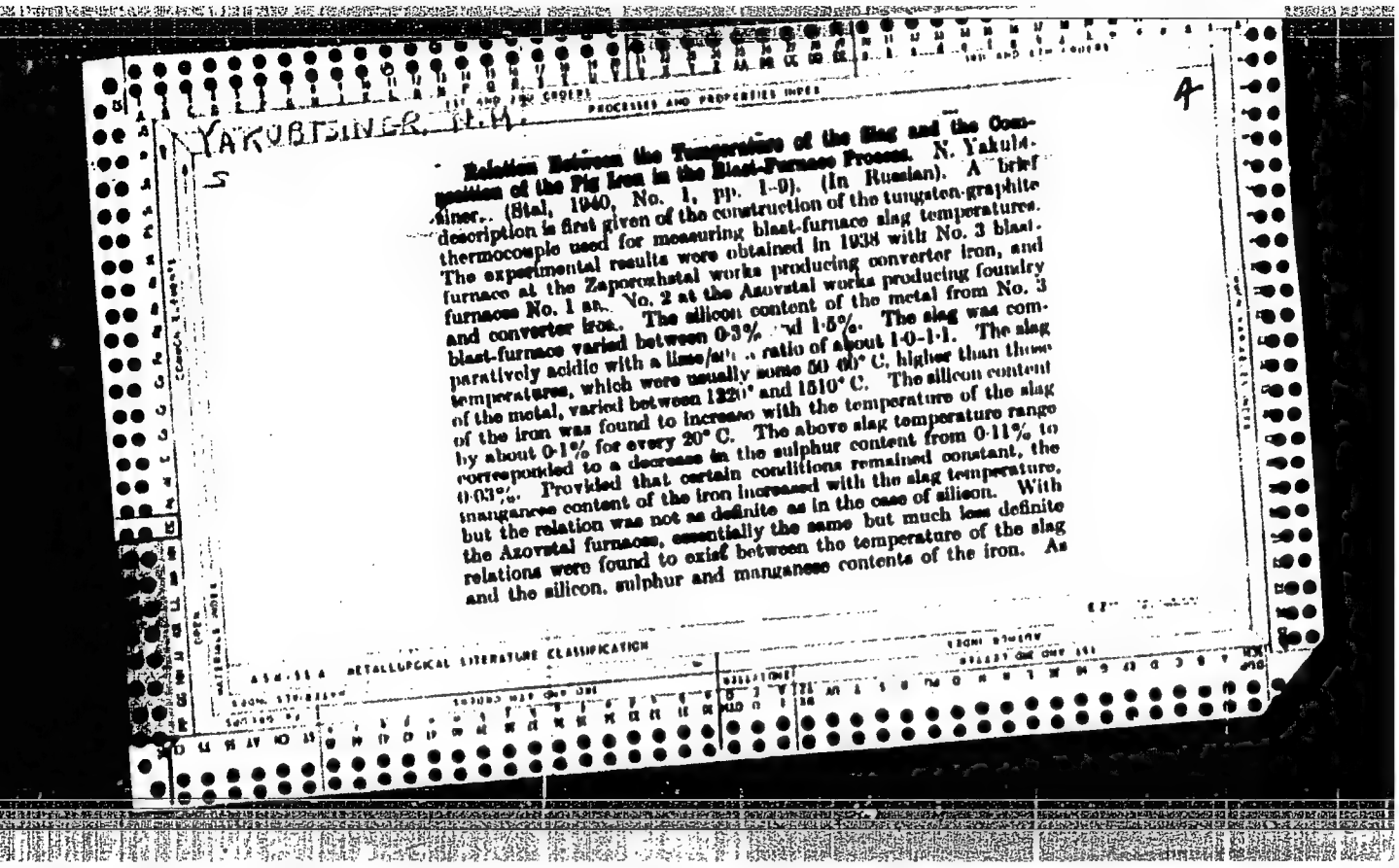
YAKUBTSINER, I.M.

Methods of measuring high temperatures in blast furnaces.

Leningrad Tsvet. Inst. 1938, No. 6, Sect. Met. 3-21(in English, 21-2). – The e. m. f. of W-graphite thermocouple was detd. experimentally for the interval 1000 1800° and graduated in a W furnace with an optical pyrometer. The graduation was checked by temp. measurements of liquid metal and slag with Pt-Rh and W-graphite thermocouples. The readings are not affected by reducing or oxidizing atm. More accurate results are obtained with thin graphite tools but these are not mechanically strong and for measurements in the tuyère region thick tools are preferable. With this couple it is possible to obtain an accurate temp. curve along the entire furnace radius including the "focus of combustion." A method is described for measuring the temp. of the iron and slag during tapping. These readings are more accurate than those obtained with an optical pyrometer. It is shown that there is a relation between the temp. of the metal and the Si and S content.

M. Z. Kamush

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



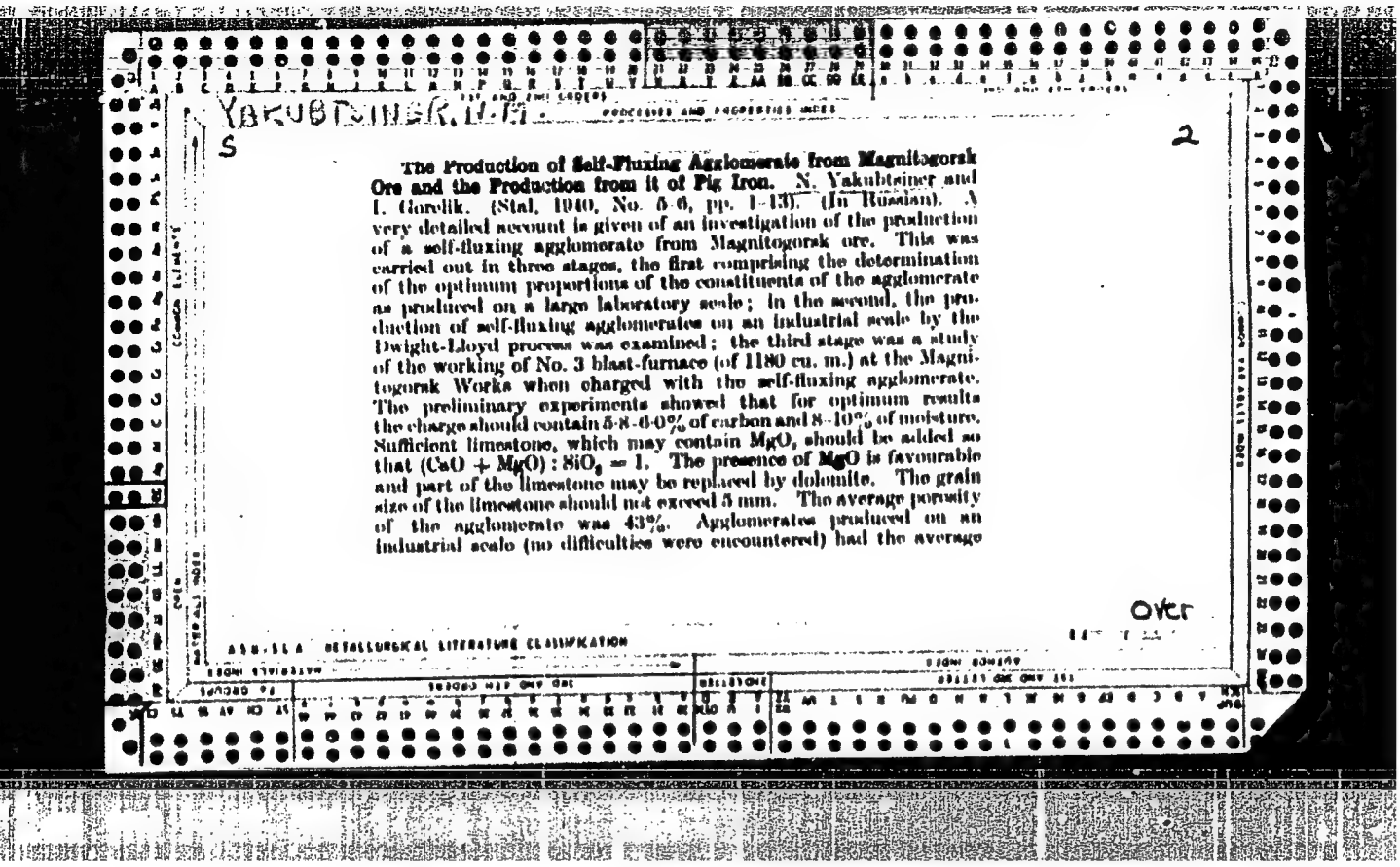
YAKUBTSINER, I.M.

4

Relation Between the Temperature of the Slag and the Composition of the Pig Iron in the Blast-Furnace Process. N. Yakubtsiner. (Stal, 1940, No. 1, pp. 1-9). (In Russian). A brief description is first given of the construction of the tungsten-graphite thermocouple used for measuring blast-furnace slag temperatures. The experimental results were obtained in 1938 with No. 3 blast-furnace at the Zaporozhstal works producing converter iron, and furnaces No. 1 and No. 2 at the Azovstal works producing foundry and converter iron. The silicon content of the metal from No. 3 blast-furnace varied between 0·3% and 1·5%. The slag was comparatively acidic with a lime/silica ratio of about 1·0-1·1. The slag temperatures, which were usually some 50-60° C. higher than those of the metal, varied between 1320° and 1510° C. The silicon content of the iron was found to increase with the temperature of the slag by about 0·1% for every 20° C. The above slag temperature range corresponded to a decrease in the sulphur content from 0·11% to 0·03%. Provided that certain conditions remained constant, the manganese content of the iron increased with the slag temperature, but the relation was not as definite as in the case of silicon. With the Azovstal furnaces, essentially the same but much less definite relations were found to exist between the temperature of the slag and the silicon, sulphur and manganese contents of the iron. As

A54-114 METALLURGICAL LITERATURE CLASSIFICATION

was to be expected, similar relations were established between the temperature of the iron and its composition. Certain deviations from the above observations resulted from, in particular, changes in the volume of the blast and its temperature. The temperature measurements of the upper and lower slag, the variation in temperature and composition of the iron in the course of a tapping, and changes in the composition of the iron resulting from interruption of the tapping are described and discussed. It was also found that there was a direct relation between the compositions of the iron and slag tapped from the furnace and the temperatures measured at the axis of the hearth of No. 3 furnace. Some practical deductions are made from the data obtained.



YAKUBTSINER, N.M.

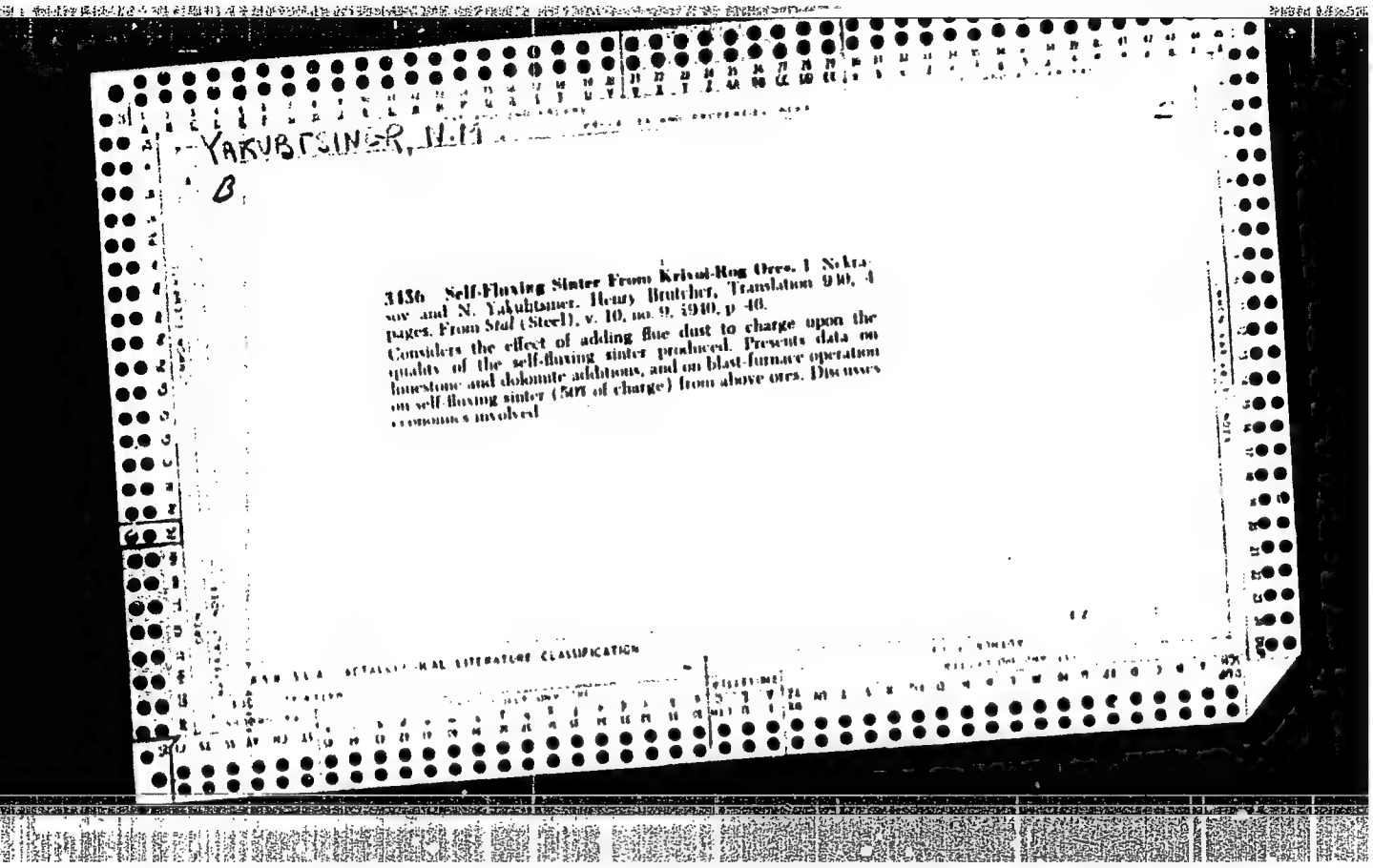
S

2

The Production of Self-Fluxing Agglomerate from Magnitogorsk Ore and the Production from it of Pig Iron. N. Yakubtsiner and I. Gorelik. (Stal, 1940, No. 5-6, pp. 1-13). (In Russian). A very detailed account is given of an investigation of the production of a self-fluxing agglomerate from Magnitogorsk ore. This was carried out in three stages, the first comprising the determination of the optimum proportions of the constituents of the agglomerate as produced on a large laboratory scale; in the second, the production of self-fluxing agglomerates on an industrial scale by the Dwight-Lloyd process was examined; the third stage was a study of the working of No. 3 blast-furnace (of 1180 cu. m.) at the Magnitogorsk Works when charged with the self-fluxing agglomerate. The preliminary experiments showed that for optimum results the charge should contain 5·8-6·0% of carbon and 8-10% of moisture. Sufficient limestone, which may contain MgO, should be added so that $(CaO + MgO) : SiO_2 = 1$. The presence of MgO is favourable and part of the limestone may be replaced by dolomite. The grain size of the limestone should not exceed 5 mm. The average porosity of the agglomerate was 43%. Agglomerates produced on an industrial scale (no difficulties were encountered) had the average

OVER

composition : Total iron 52·77% FeO 23·39%, SiO_2 11·07%, CaO 7·01% and MgO 1·80%. Mineralogically the agglomerates contained geh'enite ($3CaO.Al_2O_3.2SiO_2$), calcium fayalite ($Ca_2Fe.SiO_4$), hedenbergite ($CaFeSi_2O_6$) and pseudo-wollastonite ($5CaSiO_3$). In the presence of magnesium, åkermanite ($2CaO.MgO.2SiO_2$) was also formed. The working of the blast-furnace when the self-fluxing agglomerate was added to the burden was primarily characterised by exceptional steadiness, lower coke consumption and higher output. The use of self-fluxing agglomerate is particularly advantageous in connection with lean ores requiring more flux. It also permits the utilisation of limestone and dolomite quarry fines and friable limestones.

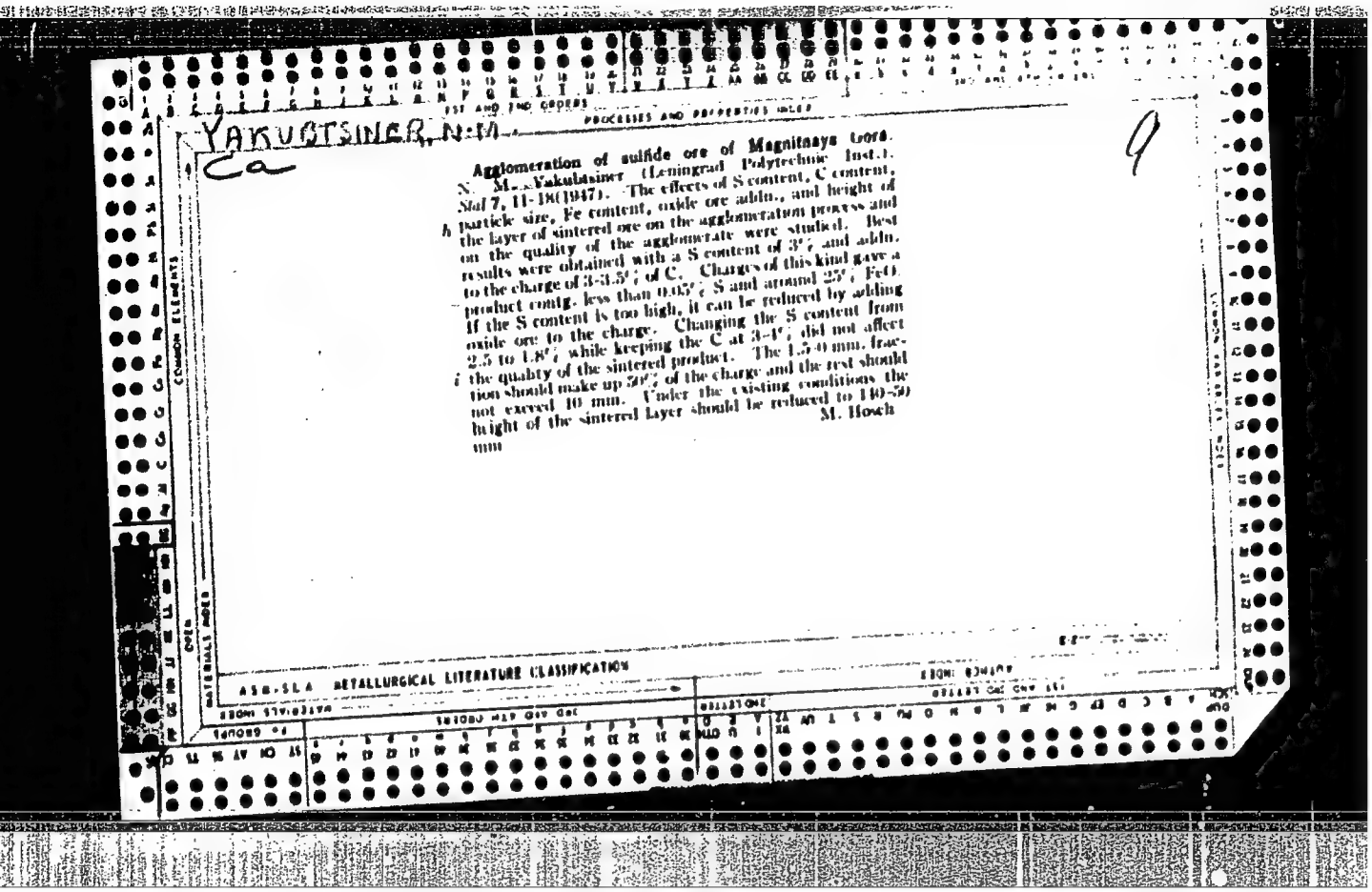


YAKUBTSINER, M.M.

B

3436 **Self-Fluxing Sinter From Krivoi-Rog Ores.** I. Sokra-sov and N. Yakubtsiner. Henry Brutcher, Translation 940, 4 pages. From *Stal* (Steel), v. 10, no. 9, 1940, p 40.

Considers the effect of adding flue dust to charge upon the quality of the self-fluxing sinter produced. Presents data on limestone and dolomite additions, and on blast-furnace operation on self-fluxing sinter (50% of charge) from above ores. Discusses economics involved



YAKUSTSINER, N.M.
Ca

9

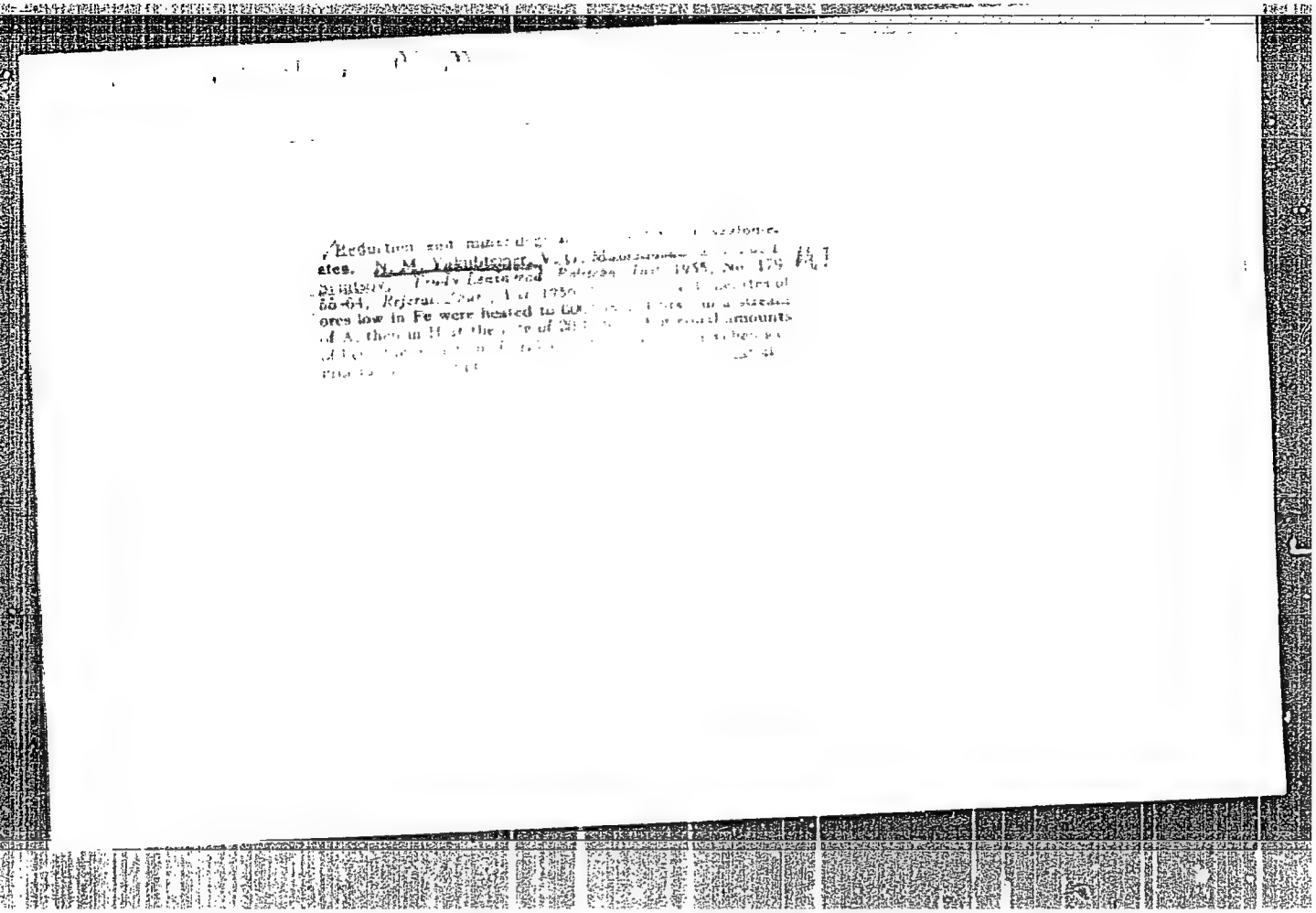
Agglomeration of sulfide ore of Magnitnaya Gora. N. M. Yakutsiner (Leningrad Polytechnic Inst.). *Stal* 7, 11-18(1947). The effects of S content, C content, particle size, Fe content, oxide ore addn., and height of the layer of sintered ore on the agglomeration process and on the quality of the agglomerate were studied. Best results were obtained with a S content of 3% and addn. to the charge of 3-3.5% of C. Charges of this kind gave a product contg. less than 0.05% S and around 25% FeO. If the S content is too high, it can be reduced by adding oxide ore to the charge. Changing the S content from 2.5 to 1.8% while keeping the C at 3-4% did not affect the quality of the sintered product. The 1.5-0 mm. fraction should make up 50% of the charge and the rest should not exceed 10 mm. Under the existing conditions the height of the sintered layer should be reduced to 140-50 mm.

M. Hoch

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

YAKUBTSINER, N.M.

Investigation of the composition of gases, their temperature and pressure in shafts of big-dimension blast furnaces. Trudy Leningrad. Politekh. Inst. im. M.I. Kalinina '49,No.2, 61-91. (MLRA 6:3)
(CA 47 no.21:11098 '53)



SOV/137-57-10-18601

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 10, p 18 (USSR)

AUTHOR: Yakubtsiner, N.M.

TITLE: An Investigation of the Production Process for, and the Properties of, Fluxed Sinter (Issledovaniye protsessa proizvodstva i svoystv oflyusovannogo aglomerata)

PERIODICAL: Tr. nauchn.-tekhn. o-va chernoy metallurgii, 1956, Vol 8, pp 99-110

ABSTRACT: Addition of ground limestone to the sinter mix considerably increases its initial permeability to gas. Moreover, this addition results in the formation of more fusible compounds. Reduction in the m.p. of the mix due to the addition of limestone and the low viscosity of the resultant compounds increase the permeability of the bed of mix to gas in the sintering zone, intensify sintering, and make it possible to obtain a strong fluxed sinter (S). When unfluxed S is produced, it is difficult to arrive at a product of adequate strength and reducibility. The reason for this is the use of coarse ground limestone, with the result that the limestone is not utilized in the sintering process. Another reason for low strength of fluxed S,

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An Investigation of the Production Process (cont.)

particularly when the mix has a high SiO_2 content, is the formation of $2CaO \cdot SiO_2$ in which the transition from the β to the γ variety, occurring at 675°C, is accompanied by a 10% increase in volume, which results in a breakdown of the S. The formation of $2CaO \cdot SiO_2$ may be significantly limited by additions of dolomite and Mn ore. A procedure has also been developed for producing highly basic (35-40% CaO) S, of good mechanical strength which, however, declines on long storage.

F.K.

YAKUBTSINER, N.M., kandidat tekhnicheskikh nauk; GRIGOR'YEVYKH, G.F., [redacted]ner.

Effectiveness of sinter cooling in a pot cooler. Metallurg no.11:2-4 N '56. (MLRA 10:1)

1. Starshiy nauchnyy sotrudnik Leningradskogo politekhnicheskogo instituta(for Yakubtsiner) .2. Nachal'nik aglomeratsionnogo tsekha Cherepovetskogo metallurgicheskogo zavoda (for Grigor'yevykh)
(Cherepovets--Sintering)

356

AUTHORS: Yakubtsiner, N. M., Cand. Tech. Sc., and Migulitskiy, L.R. Eng. (Leningrad Polytechnical Institute and Cherepovetskiy Metallurgical Works).

TITLE: Mastering of a new practice on the sinter plant of the Cherepovetskiy Works.(Osvoyeniye tekhnologii i novoy tekhniki na aglofabrike Cherepovetskogo zavoda).

PERIODICAL: "Stal'" (Steel), 1957, No.4, pp. 293-300 (U.S.S.R.)

ABSTRACT: A description of the plant (Figs. 1 and 2) and characteristic data on raw materials (Table 1) are given. The ore used - concentrates, particle size distribution of which is similar to that of flue dust. Main features of the sinter plant: 1) surface area of the strand - 75 m^2; 2) circular cooler with natural draught; 3) shuttle strand feeder evenly distributing the feed across the width of the strand; 4) double screening: stationary screens (25 mm) for hot sinter and vibrating screens (12 mm) for cooled sinter; 5) preheating of the mix with hot return fines and 6) the transfer of cooled sinter to furnace bunkers on a rubber conveyor belt. Sinter cooler with natural draught was found to be ineffective and the introduction of forced draught is considered. The effect of preheating the mix with return fines was not evaluated as it was impossible to have prolonged operation with cooled return fines. Weighing machines for the weighing of the mix before and after the addition of return fines (control of the proportion of return fines) were found to

Mastering of a new practice on the sinter plant of the Cherepovetskiy Works. (Cont.)

be unreliable due to difficult operating conditions (rapid corrosion of vital parts). The operation of the conveyor belt transporting sinter to furnace bunkers initially presented some difficulties - sticking of sinter in funnels (chutes) and burning of the belt due to inefficient cooling - which were overcome. Basicity of the sinter produced was initially about 0.5, then was raised to about 1, 1.2 and finally to 1.3 (chemical composition and drum test - Table 2 and size distribution of sinter in furnace bunkers - Table 3). Size distribution of self-fluxing sinter was much finer. Changes in the size distribution of sinter during transport from the sinter plant to furnace bunkers was investigated. The following results were obtained:

CaO/SiO_2	Sizes mm:	>50	25-50	12-25	8-12	5-8	0-5
	after vibr.screens	73.0	7.1	6.9	4.1	2.8	6.1
0.4	% furnace bunkers	31.6	24.4	24.5	6.6	6.4	6.5
	after vibr.screens	18.0	6.1	19.5	39.4	12.0	5.1
1.2	% furnace bunkers	14.8	2.9	14.3	45.0	14.8	8.2

The operation of the blast furnace with sinter of

Mastering of a new practice on the sinter plant of the Cherepovetskiy Works. (Cont.) 356

1.2-1.3 basicity was satisfactory (no data given).
The output of sinter was 1.32 ton/m^2hr.
Sinter plant operating data:

strand speed, m/min	2.65 - 3.25
bed height, mm	250 - 270 mm
temperature of waste gas, ^oC	180 - 200
fan suction, mm H_2O	110 - 1200

There are 6 figures and three tables.

SOV/130-58-6-4/20

AUTHORS: Levin, L.Ya., Yakubtsiner, N.M., Sholeninov, V.M. and Grigor'yevykh, G.F.

TITLE: Use of Pyrite Cinders in the Production of High-basicity Fluxed Sinter (Primeneniye piritnykh ogarkov v proizvodstve oflyusovannogo aglomerata povyshennoy osnovnosti)

PERIODICAL: Metallurg, 1958, Nr 6, pp 5 - 10 (USSR).

ABSTRACT: A shortage of concentrates at the Cherepovets Metallurgical Works led to the use from the end of 1956 of pyrite cinder. Mentioning this, the authors go on to describe the development of sintering methods enabling a high proportion of this material to be used in the production of sinter with a basicity range of 1 - 1.2. The sinter plant at the works has three 75 m^2 machines and sinters a relatively high SiO_2 mix (Table 1). The pyrite cinders available from the Dorogomilovsk and Shchel'kovsk Works contain 0.3-0.4% Cu and 0.35-0.45% Zn, the sulphur content of both varying widely. Because of the paucity of published data and lack of experience in the USSR, on the sintering of pyrite cinders, experiments were first carried out on a 0.11 m^2 sinter box (Figure 2) with the participation of P.T. Krasavina, A.S. Bulatnikova and A.G. Zel'tser.

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Use of Pyrite Cinders in the Production of High-basicity Fluxed Sinter

Coke and limestone were 3-0 mm, cinders, concentrates and flue-dust were screened through a 5 mm screen and returns were 12-0 mm. The results showed (Figure 3) that with a mix containing 10-30% cinders accurate control of carbon (to 4.5 and 3.5-4.0% in the box and on the full scale, respectively), was obtained. A further series of tests were made with mixes containing 33% cinder showing sinter sulphur increasing with increasing CaO-content, but this effect could be minimized by raising the carbon content of the mix. Sintering speed increased as the basicity was raised to 0.8 but was unaffected by further increases. With increasing returns, from 25 to 35% sintering rate, permeability and sinter strength increased and sulphur decreased (Figure 5). Tests with 0-40% cinders in the ore part of the mix showed that a satisfactory sinter was obtained with 20-25% cinder without appreciable slowing of sintering. Bed depths of 200, 225, 250 and 275 mm were tested (Figure 7) with 25% cinders and a basicity of 1.2: maximal sulphur was obtained with the shallowest bed, the best de-sulphurization being obtained with intermediate bed depths. Sinter strength was highest with a bed depth of

Use of Pyrite Cinders in the Production of High-basicity Fluxed Sinter

225 mm, while sintering speed decreased when the depth exceeded 250 mm. The authors' conclusion is that 250 mm is the optimal bed depth. Results of full-scale experiments (Figure 8) at the Cherepovets Works on the whole confirmed the box experiments. The main conditions for maximal desulphurization during sintering were found to be: bed-depth 240-250 mm instead of 275, carbon content of the mix 4.5 - 4.8 instead of 3.5-4% (with 20-25% cinders); good permeability, secured by 30-35% returns and an artificial hearth layer. The lower iron content of the sinter with cinders was found to have no effect on the coke rate (700 kg/t pig) or the coefficient of utilisation of useful volume (0.73). There are 8 figures and 2 tables.

ASSOCIATION: Cherepovetskiy metallurgicheskiy zavod (Cherepovets Metallurgical Works) and Leningradskiy politekhnicheskiy institut (Leningrad Polytechnical Institute)

Card 3/3 1. Sintering furnaces - Equipment 2. Pyrites - Applications
3. Sintering furnaces - Operation

YAKUBTSINER, M.M.

Sintering the Olenogorsk concentrates. Trudy LPI no.212:162-170 '60. (MIRA 13:12)

(Olenogorsk--Iron ores) (Sintering)

18.2000

77443
SOV/133-60-1-4/30

AUTHORS: Yakubtsiner, N. M., Trokalo, S. K. (Candidates of Technical Sciences), and Shur, A. B. (Engineer)

TITLE: Physical Properties of Fluxed Sinter of the Cherepovets Plant

PERIODICAL: Stal', 1960, Nr 1, pp 14-18 (USSR)

ABSTRACT: This is a study of sintering problems at the Cherepovets Metallurgical Plant (Cherepovetskiy metallurgicheskiy zavod). G F. Grigor'yevykh, Ye. V. Nevmerzhitskiy, V. M. Sholeninov, D. L. Grinberg, and E. Ye. Gutman participated in the work. The plant is producing fluxed sinter from beneficiated Olenegorskiy (not identified) iron deposits and from Pikalevo deposit (Pikalevskoye mestorozhdeniye) of limestone. At some periods the pyrite cinders of plants near Moscow were added to the charge of sintering plant. The Olenegorskiy beneficiated ore (by 1958 data) contains 60.1 to 60.7% Fe; 13.2 to 14.1% SiO_2; and 1.1 to 1.3% CaO. The limestone (amounting to 360 kg/ton of sinter) contains

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Physical Properties of Fluxed Sinter of the Cherepovets Plant

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51.5 to 53% CaO; 1.5 to 4% of insoluble residue (1 to 2% SiO_2); and about 0.3% MgO. The determination of bulk weight of fluxed sinter and the determination of screen composition and the degree of crushing of sinter during transportation are described. The Cherepovets Plant, for the first time in the USSR, used a two-stage screening of sinter returns. In addition to the regular screening machines (in the unloading section of sintering machine), which screen the returns before loading of sinter into cooler, the additional vibrating screening machines for secondary screening of fines (after the cooler) are installed. The bulk weight of sinter varies. It is due to the increase of the apparent specific weight of sinter pellets with the decrease of their size, as shown by the experimental data previously obtained by N. M. Yakubtsiner and Yu. P. Smirnov (see Fig. 2). For the study of screened fluxed sinter, samples were taken from the conveyors. The results are given in Fig. 4. The tests show that the secondary screening of returns is expedient. However, the consecutive transportation and reloading of sinter results

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Physical Properties of Fluxed Sinter of the Cherepovets Plant

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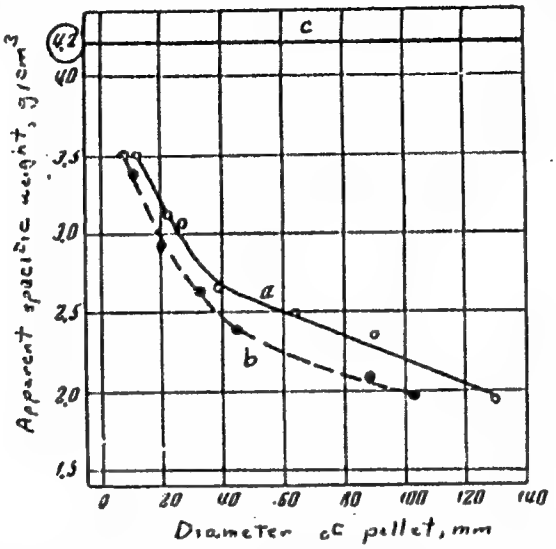

Fig. 2. The relationship between the apparent specific weight of sinter and the size of pellets: (a) sample Nr 1; (b) sample Nr 2; (c) true specific weight.

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Physical Properties of Fluxed Sinter of the Cherepovets Plant

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SOV/133-60-1-4/30

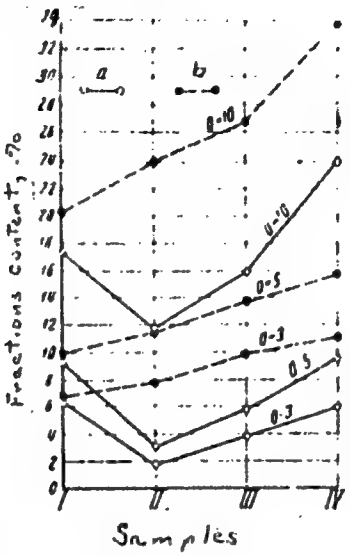

Fig. 4. Change in composition of various fractions (from 0-3 to 0-10 mm) in the sinter, when screening with 2 open sections (a) and totally closed (b) screening machines (samples I to IV).

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in the new formation of fines. The effect of prolonged storage in silos on the screen composition of sinter; the crushing of sinter fractions (from 3 to 5 and 100 to 150 mm) during the storage in piles under the silos for 5 to 24 hr; and the change of screen composition of fresh sinter and sinter stored at the ore yard were studied. The deterioration of screen composition of sinter during its storage at ore yards (with accompanying increase of bulk weight), as compared with sinter of current production, supplies a good argument in favor of building the sintering plants at the metallurgical plants and not at the ore mines. The authors state that in order to bring to a minimum the amount of fines in the sinter, which is charged to the furnace, the screening of fines before loading of sinter into skip is imperative. At present the amount of fines (of 0-5 mm fraction) at the Yenakiyevo Plant (Yenakiyevskiy zavod) reaches 21%, and at the Krivoy Rog Plant (Krivorozhskiy zavod), 20.8%.

Physical Properties of Fluxed Sinter of the Cherepovets Plant

77443
SOV/133-60-1-4/30

There are 9 figures; 2 tables; and 3 Soviet references.

ASSOCIATION: Leningrad Polytechnic Institute (LPI), Central Scientific Research Institute of Ferrous Metallurgy (TsNIIChM), and Cherepovets Metallurgical Plant (Cherepovetskiy metallurgicheskiy zavod)

Card 6/6

18.2000

78176
SOV/133-60-3-1/24

AUTHORS: Yakubtsiner, N. M., Nevmerzhitskiy, Ye. V., Grigor'yevykh, G. F.

TITLE: The Practice of Producing Sinter of Increased Basicity When Sintering Fine Beneficiated Ore

PERIODICAL: Stal', 1960, Nr 3, pp 193-203 (USSR)

ABSTRACT: This is a description of a successful production of increased basicity sinter at the Cherepovets Metallurgical Plant(Cherepovetskiy metallurgicheskiy zavod). The described sintering plant is equipped with 3 sintering machines which were put into operation in June 1955 and April and December 1956, respectively (see Fig. 1). In the first few months the plant produced nonfluxed sinter, or sinter with the degree of basicity ($CaO : SiO_2$) not higher than 0.5; but since the end of 1955 the plant has been producing sinter of 1.15-1.20 basicity. Working on such sinter, the plant's blast furnaces had better results (regarding coke consumption)

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than other furnaces in the USSR. Described are: characteristics of raw materials and their preparation for sintering; Olenogorsk (not identified) beneficiated ore; pyrite cinders; limestone; coke fines and other admixtures, as well as the work of sintering plant and the quality of sinter; operation of the equipment and technical-economical characteristics of the sintering plant work. The cost of sinter, considerably lowered since 1956, (125-127 rubles/ton) and processing (about 15 rubles/ton) is still expensive compared with Southern plants (48-55 rubles/ton for sintering; 8-10 rubles for processing. This is explained by: (a) higher cost of Olenogorsk beneficiated ore (107 rubles/ton) as against that of Krivoy Rog beneficiated ore (30 rubles/ton); (b) high power cost due to unfinished construction of the plant and overequipment of sintering plant with electrical machinery; (c) expensive repairs of new equipment (ring type coolers of sinter, conveying of sinter into blast furnace shop, etc.) and purchase

of rolled shapes from the outside. Proposed measures for lowering the cost of sinter are: (1) decreasing power consumption by eliminating excess power electrical motors, introducing automation, reducing idle time to a minimum; (2) improving quality of repairs, with corresponding extension of time between repairs; (3) prolonging the life of parts by making them from manganese steel (guard plates) and heat resisting cast iron (fire grates, etc.), applying heat treatment, etc.; (4) increasing the amount of relatively cheap scale in the charge; (5) increasing sinter production and the productivity of labor by 5-6%. The above measures will lower the cost of sinter (3.5-4 rubles/ton) and Cherepovets cast iron (7-8 rubles/ton).

ASSOCIATION: Cherepovets Metallurgical Plant and Leningrad Polytechnic Institute (Cherepovetskiy metallurgicheskiy zavod i Leningradskiy politekhnicheskiy institut)

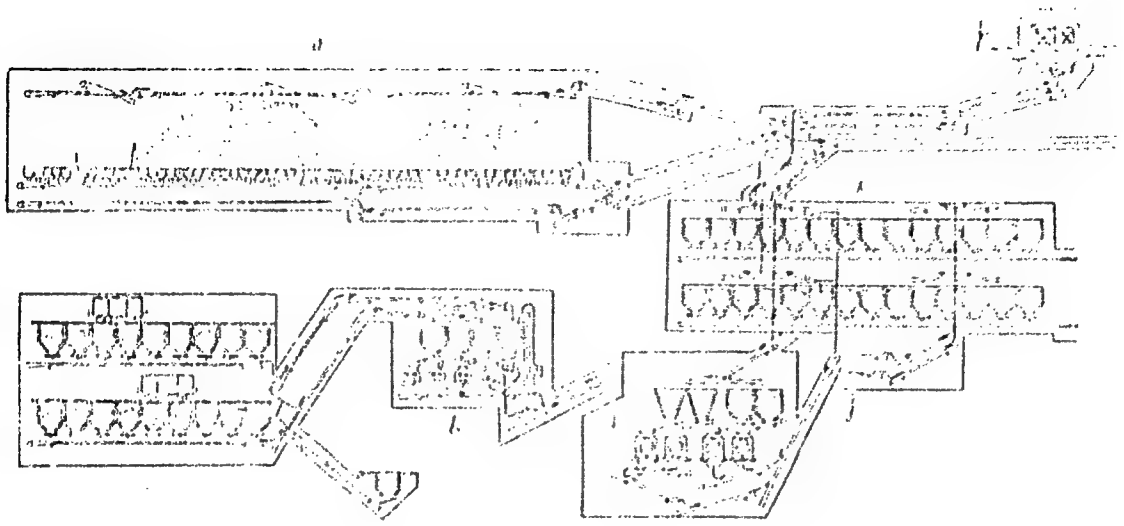

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Fig. 1.

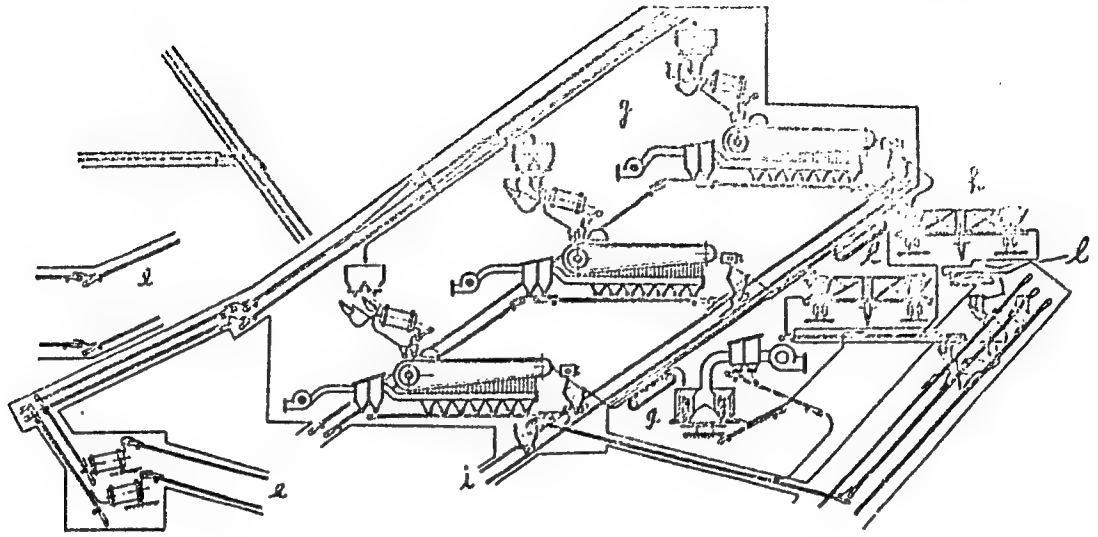

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Fig. 1. (Caption on Card 6/6)

Fig. 1. Schematic diagram of equipment at the Cherepovets sintering plant. (a) Ground type, roofed storehouse of beneficiated ore; (b) coke crushing building; (c) conveyors into charge building; (d) limestone crushing building; (e) conveyors into sintering building; (f) car dumper; (g) sintering building; (h) three-ring type sinter coolers (the third cooler is equipped with cooling blower and battery cyclones); (i) conveyors into primary mixing building; (j) conveyors from coke crushing building; (k) charge building; (l) plate transporters.

GOL'MSHTOK, Ya.M.; KUZ'MIN, I.A.; LEVIN, L.Ya.; RAMM, A.N.; YAKUBTSINER, N.M.

Three years of blast furnace operation at the Cherepovets Metallurgical Plant. Trudy LPI no.212:7-23 '60. (MIRA 13:12)
(Cherepovets--Blast furnaces)

YAKUBTSINER, N.M.

Effect of the content of magnesium in the sinter on its reducibility. (MIRA 13:12)
Trudy LPI no.212:158-161 '60.
(Sintering) (Magnesium)

TREKALO, S.K.; YAKUBTSINER, N.M.; ANDRONOV, V.N.; GRIGOR'YEVYKH, G.F.; KAYLOV, V.D.; SHOR, A.B.; v rabote prinimali uchastiye: NEVMERZHITSKIY, Ye.V.; SHOLEHINOV, V.M.; VITOVSKIY, V.M.; GRINBERG, D.L.; GUTMAN, E.Ye.; YEGOROV, N.D.

Open-hearth furnace operations with classified sinter. Stal' 20 no. 12:1063-1070 D '60. (MIRA 13:12)

1. TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii i Cherepovetskiy metallyrgicheskiy zavod.
(Blast furnaces) (Sintering)

YAKUBTSINER, N.M., kand. tekhn. nauk; SMIRNOV, Yu.P., inzh.

Automatic control and regulation of the sintering charge moisture. Stal' 24 no.1:9-14 Ja '64. (MIRA 17:2)

1. Leningradskiy politekhnicheskiy institut.

YAKUBTSINER, N.M.; SMIRNOV, Yu.P.; SHOLENINOV, V.M.

Optimum coarseness of the components of a sintering charge during the sintering of fine-grained concentrates. Trudy LPI no.225: 168-177 '64. (MIRA 17:9)

YAKUBTSINER, N.M.; SVINTSOV, Yu.P.; SMIRNOV, Yu.P.

Heat capacity and heat conductivity of sinters. Trudy LPI no.225: 178-186 '64. (MIRA 17:9)

YAKUBTSOV, S.I., starshiy nauchnyy sotrudnik

Effectiveness of new herbicides in corn fields. Zashch. rast. ot vred. i bol. 8 no.2:21-22 F '63. (MIRA 16:7)

1. Vsesoyuznyy institut zashchity rasteniy.
(Corn (Maize)) (Herbicides)

YAKUBTSOV, S.I.; PAVLOVSKAYA, V.O.

Effectiveness of simazine and atrazine in the monocultures of corn. Trudy VIZR no.17:344-358 '63. (MIRA 18:9)

YAKUBTSOVA, Irena

Defects of the heart septum in children and indications for their surgical treatment by the use of artificial blood circulation. Trudy Inst.eksp.i klin.khir. i gemat. AN Gruz.SSR 10:53-56 '62. (MIRA 16:2)

(CHILDREN—SURGERY) (BLOOD—CIRCULATION, ARTIFICIAL)
(HEART —SURGERY)

YAKUBTSOVA, L. S.

YAKUBTSOVA, L.S.

Cytological study of the growing point of winter wheats in vernalization under negative temperatures. Uch. zap. Len. un. no.165:135-145 '53. (MLRA 7:7)

1. Laboratoriya genetiki rasteniy kafedry genetiki i selektsii (zaveduyushchiy kafedroy professor N.V. Turbin)
(Wheat) (Vernalization)

YAKUBYAN, S.S.

Yakubyan, S.S. "Regarding the principles of formulation the accounting plan of an industrial enterprise (structure of the balance-sheet)2, Trudy Lesotekhn. akad. im. Kirova, No. 63, 1948, p. 159-69.

SO: U-3042, 11 March 53, (Letopis 'nykh Statey, No. 9, 1949)